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Windjamming Around New England

By Tom Horgan

With Illustrations by National Geographic Photographer Robert F. Sisson

ALONG about April, when spring's first timid smile drives New England small-boat sailors into a frenzy of calking, painting, and repairing, I can expect at least one of my friends to say, in effect:

"Here you are, the owner of a fine little boat, one that could go anywhere. And yet every summer you take much the same cruise—South Shore, Cape Cod, the islands, North Shore, and Cape Ann. You cruise for three weeks and still you're never much more than 100 miles from home. Year after year you see the same places. Why?"

I always listen tolerantly to these well-meaning friends. True, my 40-foot auxiliary ketch *Nomad* could "go anywhere." Sometimes I don't even bother to point out that to "go anywhere" takes time and that three weeks is all the summer leave I can wangle from the Boston bureau of the Associated Press, where I earn the money to keep *Nomad* shipshape.

And so last summer our cruise was much the same as before, the latest in a series of many, interrupted only by World War II.

To me, New England waters offer everything the sailing vacationist could ask. *Nomad's* company has seen most of the world without finding a region of like area where so many pleasant and interesting places may be visited in so short a time.

Our course covered a route well worn by mariners since the days of the Norsemen (map, page 145). Everywhere were reminders of those who had sailed our way before, some godly and many otherwise. The coves and harbors we visited had been used by early explorers, patriots, pirates, and privateers; slavers and whalers, East Indiamen, and other honest seafarers.

Nomad's company included four veterans of previous cruises. From Washington came two new hands: Robert F. Sisson, photographer, and Stuart E. Jones, both of National Geographic's staff.

A reputation as cook gained on previous voyages, plus his magic touch with *Nomad's* often reluctant coal-burning stove, gave Robert G. Allen command of the galley (page 155). He was relieved frequently by Col. William H. Speidel, on leave from the Army.

Arthur Mortenson was responsible for *Nomad's* sailing gear, 24-horsepower auxiliary, and general well-being. I concentrated on navigation, mindful that *Nomad* could not easily be replaced if she strayed into shoal water, and often there was plenty of that close at hand. All stood tricks at the wheel.

A Haven for Boston's Bohemians

Last of the supplies went aboard at Boston's T Wharf the night before we sailed into a misty August dawn. T Wharf, built about 1722, gets its name from its original shape, not from the famous Tea Party.

Until the new State pier was built farther down the harbor, T Wharf was Boston's principal landing place for fish. Old-timers remember when windjammers crowded the slips on either side. That was before engines plucked canvas from the spars of fishing fleets.

Then busy sailmakers occupied the greater part of a long, rambling, three-storied building that runs the length of the wharf. As the sailmakers departed, artists, writers, and other folk converted the lofts into studio apartments,

finally 27 in number. I occupy one, and Bob Allen another. T Wharf is Bohemia's last dump, pungent beachhead in Boston. Visitors have called it "a bit of Greenwich Village—with salt water."

On the starboard hand leaving T was Long Wharf, supporting a big yellow shed at its end. On the shed's side is painted the intelligence that here Capt. Lorenzo D. Baker, a Cape Coddee, in the schooner *Telegraph*, landed the first full cargo of bananas to reach the United States, back in 1871.

The *Telegraph's* bananas were received with suspicion. Captain Baker was forced to give away much of his cargo before Bostonians were convinced the fruit was not poisonous. Some time later, it was considered safe to give bananas to children. Such was the beginning of an important industry.*

Visibility was poor as we chugged down the harbor, whistling vainly for a wind. Passing the Navy Yard annex, we swept past the bows of the "mothball fleet." Gun mounts of aircraft carriers and other warships were ghostly under gray metallic "igloos."

In the haze we had a little difficulty picking up Nixes Mate, marking the entrance to the Narrows. Nixes Mate is a reminder of the tale of a seafarer said to have been hanged in 1636 for the murder of his skipper on what then was an island where sheep grazed. The mate said, as the noose was slipped over his head, that the island would wash away and thus prove his innocence. And so it has. Its location is marked only by a black-and-white pyramid as an aid to navigators.

Although the mate's name is lost to history, those of other notorious pirates and mutineers who were executed on the island are not.

Thomas Hankins, black sheep of a respected family, ended his piratical career there in 1689; John Quelch, in 1704; and William Fly, in the same era.

Through Cape Cod Canal

The haze burned off as we threaded the Narrows, passing between crumbling harbor forts, and laid our course for the Cape Cod Canal, 50 nautical miles away. The sea remained glassy, without a trace of wind. Allen whipped up breakfast, and we lolled comfortably in the cockpit, watching South Shore towns glide past (page 149). We vetoed calls, feeling the cruise would not be well under way until we reached the canal.

The original plan was to tie up for the night in a snug harbor of refuge dug into the bank near the canal's eastern entrance. But a green light glowed from the control station and the sun was still high; so we kept going. Sisson dropped into the dinghy, towed astern, and went to work with his cameras as we passed under the two beautiful highway bridges, lacy against the sky, and the railroad lift bridge. All have 135 feet clearance, easily accommodating *Nomad's* 57-foot mainmast (page 160).

All along the canal's banks we saw anglers, perched precariously on rocks, casting for striped bass. Sometimes their lures almost landed on *Nomad's* deck. The only catches we saw were several big skates, which the fishermen discarded in disgust.

Gamy "stripers" seem to enjoy the swift, turbulent run of the tide through the canal, which at times attains four knots. This is further complicated by the fact that the mean rise and fall at the Cape Cod Bay, or eastern, end is 9.4 feet and only 4 feet at the Buzzards Bay, or western, entrance. It is well to consult the Coast and Geodetic Survey's *Tide Tables* before tackling the canal.

Before the canal was dug, small boats often were hauled across the narrow neck of land by oxen (map, page 145). Earlier, the Indians portaged their canoes by the same route.

Mysterious "Rites" at Mattapoisett

The tide turned against us as we cleared the canal and headed for Mattapoisett, on Buzzards Bay. As we felt our way in the blackness, steering for lights marking the old stone whaling pier, we noticed strange activity.

At the shore end of the pier several hundred people were whirling and gyrating, dipping and bowing, as if engaged in weird tribal rites. Floodlights illuminated the scene.

As we drew closer, we heard a metallic refrain from amplifiers: "Toe over toe, heel over heel! The faster you dance the better you feel!"

Mattapoisett was having a Saturday night square dance.

Once *Nomad* was secured, we walked through the festive throng and into the village to pay our annual call on Bill and Lu Monnhan, a young couple who operate a summer hotel. Among this quiet inn's decorations are relics from the bark *Wanderer*, last square-rigged whaleship to sail from New Bedford. The voyage was brief, however, for *Wanderer* was wrecked on Cuttyhunk Island, about 15 miles from her home port.

Early next morning we struck out across Buzzards Bay for Woods Hole, the passage to Vineyard Sound between the mainland and Nonamesset of the Elizabeth Islands chain. Here we encountered our only fog in three

* See "Boston Through Midwest Eyes," by Frederick Simpich, National Geographic Magazine, July, 1936.

Daniel, Stout Veteran of Many a Whale Hunt, Now Graces a Nantucket Garden

Daniel I. Tenny still seems to be breasting a gale just as he did in the days when he adorned the prow of his namesake ship. When the vessel was converted to a barge, Bostonians bought her figurehead for their summer home. While being ferried to Nantucket, it was swept overboard in a storm. Lassoed, it was towed the last few miles to port. Meanwhile, the *Tenny* sank on her first voyage without her figurehead.

weeks. It rolled in thick and sticky, and the wind fell to a whisper. While groping about, we had time to consider what the *United States Coast Pilot* has to say about the Hole.

"Woods Hole," it cautioned, "is a narrow passage leading between numerous ledges and shoals . . . It is well marked . . . but the tidal currents are so strong [up to 4 knots] that the passage is dangerous without some local knowledge. The buoys in the narrowest part . . . are frequently towed under by the currents. A stranger should not attempt to pass through except near slack water."

Although we did not consider ourselves strangers, we were more comfortable when the fog lifted and we scooted through with much of the four knots hurrying us toward Edgartown, on Martha's Vineyard Island.

A Rendezvous of Windjammers

There, and it was the reason we were in a hurry, we found dozens of flag-bedecked craft of the New York Yacht Club on annual cruise.

Sailing partisans are inclined to look through the wrong end of their spyglasses at powerboaters, and call their craft "stinkpots," or worse. The N. Y. Y. C. fleet was reassuring. More than half of the 60-odd yachts in Edgartown Harbor wore canvas. Among them were John N. Matthews's 116-foot *Manxman*, the largest yawl in the world, and *Bolero*, the magnificent new 73-foot yawl owned by John Nicholas Brown, former Assistant Secretary of the Navy for Air.

We came up the harbor along a shore lined with the proud homes of famous whaling captains. Atop some were widows' walks, from which watch was kept for homebound vessels. The variety in doorways is no accident; the old captains wanted something distinctive.

English settlers in the early 1600's called it Great Harbor, but much earlier it was known to others, probably by other names. Island historians claim the Norseman Karlsefni Thorfinn came by in 1006; Giovanni da Verrazzano, sailing in the service of France, in 1524, and later Samuel de Champlain and the Dutch navigators Hendrick Christiansen and Adriaen Block.

Many historians believe that it was this island to which Bartholomew Gosnold gave the name Martha's Vineyard in 1602.

Massachusetts did not establish authority over the Vineyard until 1691, after New York had abandoned claims.

It is pleasant to reflect that the Vineyard was an island of amity between the early settlers and the Indians, who later formed an important part of whaling crews.

Next morning we went out to the harbor entrance to watch the start of the N. Y. Y. C. race back to Mattapoisett. For a while we sailed in close company with *Fiddlers' Green*, a rakish little schooner which her owner, Dr. Edmund B. Kelly of Baltimore, took on an adventurous South Pacific cruise just before the war.

The racing craft got away, light airs ballooning their gay nylon spinnakers. We returned to resume exploration of Edgartown's shady streets, its many old dwellings neatly fenced and flanked with bright flowers. Flowers always seem more vividly tinted near salt water.

We drove over to Gay Head, on the western end of the island, where the cliffs wear varied pastel shades of red, yellow, and purple (page 163). There, too, were a few of the once numerous Gay Head Indians, selling beadwork and other trinkets.

We would have preferred to visit Menemsha, four miles from Gay Head, by water; but since long-legged *Nomad* draws nearly seven feet and the chart guaranteed only six, we drove to that picture-postcard fishing village.

Fishing boats snuggled against gangling wharves, at the head of which was the general store. Before the 1938 hurricane * carried away the original structure, the store had a sign: "We sell most anything but rum."

Small-craft warnings were flying as we sailed for Nantucket. Warnings of one kind or another were displayed almost constantly during the three weeks we were out. The Weather Bureau apparently had an eye on a hurricane then howling in the Tropics.

Brisk Wind Speeds *Nomad* to Nantucket

As it turned out, the 25-mile run to Nantucket was the only time it was found advisable to douse *Nomad's* mainsail. Under jib and mizzen, she skipped over a dancing sea, driven by a brisk northeasterly abeam, curtsied to the Cross Rip Lightship, and soon was boiling up the narrow mile-long channel to the harbor.

It was a route used by countless whalers, but when they came home heavily laden they were lettied over the shallows by "camels," mobile floating drydocks similar to those used in the Pacific war.

We tied up at the Island Service Wharf, using bollards that had held the dock lines of vanished blubber hunters. While fuel, water, and ice came aboard, Colonel Speidel disappeared, toured Easy Street's shops, and returned with lobsters fresh from the sea, and green corn from island farms.

When possible, we took advantage of local

* See "Geography of a Hurricane," by F. Barrows Colton, NATIONAL GEOGRAPHIC MAGAZINE, April, 1939.

141 Drawn by Theodore F. Thompson

Nomad's Vacation Course Touched Harbors and Coves Where America's Earliest Explorers Found Shelter

From Boston the author and companions sailed southward and through the Cape Cod Canal to Mattapoisett. Next stops were Martha's Vineyard and Nantucket. Past the Elizabeth Islands and Block Island, the route led to historic Stonington and Mystic, Connecticut. Returning through the canal, *Nomad* sailed to Provincetown, on the tip of the Cape, then across Massachusetts Bay to Cape Ann and back to Boston.

products, and were rewarded in quality and pocketbook. There is no more fruitful field for the sea-food branch of gastronomic research than New England. Lobster and corn we always boiled in sea water. No additional seasoning is needed.

Other menu items were scallops, quahogs, soft-shelled clams, swordfish, and tuna.

Nantucket's whaling museum, housed in an old sperm-candle factory, contains a fascinating collection. Among its documents is the log of Capt. Mayhew Folger, who discovered the last of the *Bounty* mutineers on Pitcairn Island. Captain Folger devoted scant space to a subject that later inspired volumes.

America's Pioneer Woman Astronomer

We went around to Maria Mitchell's 18th-century home to squint through the brass telescope with which she discovered a comet in 1847 and won international renown.

Miss Mitchell, pioneer woman astronomer in America, made a computer of the Tables of Venus for the *Nautical Almanac* and instructed Nantucket mariners in celestial navigation. She also found time to rate ships'

Grandmother's Playthings Now Museum Pieces

Hunter House in Newport, Rhode Island, displays this dollhouse of the Gay Nineties. Faithfully reproduced in the old-fashioned kitchen are washstand, coal stove, oil lamps, and cooking utensils. Other cabinets contain dining rooms, drawing rooms, and bedrooms. Built in 1756, Hunter House served as the Revolutionary War headquarters of French Admiral Charles Louis d'Arsac, Chevalier de Ternay (page 165).

chronometers. She was a member of one of the many Quaker families who early settled on the island.

Nantucket boasts many venerable and stately mansions, built by whale oil and bone. Oldest dwelling is the Jethro Coffin House, built in 1686, a modest salt-box structure of small leaded casements and hand-wrought hinges. Oldest church is the Quaker Meeting House; oldest manufactory, a windmill built in 1746 to grind corn (page 152).*

We called on Charles F. Sayle, bearded seaman and maker of ship models, in his cluttered workshop (page 168). The sea summoned Sayle from his native Ohio at 14. He has "swallowed the anchor," but ships are still his business—faithful replicas of vessels that once sailed the Seven Seas.

Besides building models, he restores old and damaged ones for museums and collectors.

With minute jewelers' tools, incongruous in the hands of a man more than six feet tall, Sayle was sheathing the hull of a windjammer model with tiny strips of copper. Each copper plate was made by Sayle, as was each of the 1,400 microscopic copper nails which he drove with a Lilliputian hammer.

Such a model, Sayle estimated, would require about 1,000 hours of meticulous labor. For this product of craftsmanship he expected to receive about $1,500.

Daniel Has Retired from the Sea

We drove over to Gilbert Verney's rambling summer home on the western end of the island to inspect his figureheads. Histories of some of the ships they decorated are vague, but one at least must have been tragic, for the figurehead was washed ashore.

On the lawn in front of the summer cottage of Hamilton Heard we saw another interesting figurehead, known as "Daniel." It is carved in the likeness of a bearded, frock-coated gentleman of the old school, possibly a skipper or shipowner. One wooden thumb is hooked under an oaken lapel. With left foot thrust forward, the figure appears to be striding into the teeth of a wind. A red bow tie makes a splash of color at the throat (page 143).

* See "Nantucket—Little Gray Lady," by William H. Nicholas, National Geographic Magazine, April, 1944.

For many years Daniel has been a member of the Adams-Heard family, who rescued it when the ship whose prow it adorned was converted into a barge. Members of its adopted family left Boston in a powerboat with Daniel as a cumbersome cargo. Just off Nantucket a storm swept it overboard. After some difficult maneuvering, the figurehead was lassoed and towed the last few miles to its new home.

When I asked the reason for the figurehead's name, I was told it was of one Daniel I. Tenny and once adorned a ship named for him.

Daniel now spends most of its time in the Heard garage. Every spring it is given a fresh coat of paint and placed outdoors.

We sailed across Nantucket Sound to Hyannis, the bustling metropolis of Cape Cod. Haze hid the Bishop and Clerks Lighthouse, marking the shoal of the same name, until we were close by.

A narrow channel winds through Lewis Bay to Hyannis. On an earlier visit we grounded in mid-channel. The fisherman who hauled us off assured us it was no disgrace. The sand bars, he explained, often shift faster than tenders can relocate the buoys.

At near-by Centerville we visited the Jack McGillicuddys of Boston, whose summer home is one of the finest examples of restoration on the Cape. Records indicate it was built in 1720, or earlier, by a member of the Lewis family, which settled on the Cape in 1639.

Among the house's features are Dutch ovens built into living-room and kitchen fireplaces. Clamshells were mixed in the cement, but our hosts were unable to explain their masonry value beyond their obvious availability.

Hyannis has a permanent population of about 6,000, but in summer it more than doubles. Part of Barnstable Town, it serves as a shopping center for a wide area. New York and Boston shops have summer branches there. It is a market place for Cape products from farm, sea, and workshop. Fragrant bayberry candles are a specialty.*

One of the oldest windmills on the Cape stood just across Lewis Bay, in adjacent Yarmouth Town, until taken out to Dearborn, Michigan, by the late Henry Ford.

Chowder Fortifies Against Chill

Colonel Speidel, one of the few ship's cooks of his rank, brewed a big kettle of quahog chowder to fortify us against a chilly rain. The rapidity with which it disappeared attested to its quality. Enough quahogs—clams to non-New Englanders—for a sizable chowder can be gathered in a few minutes by wading at low tide and prospecting with the toes.

Hyannis to Woods Hole, a village in the town of Falmouth, was only a brief 23-mile run, but it called for precise navigation between the mainland and straggling L'Homnedieu Shoal. How the shoal got this spiritual name we were unable to learn, but we appreciated the clear weather as we picked up the buoys marking it.

Woods Hole, Center of Marine Research

Woods Hole is an important center of scientific research (pages 158 and 160). Here is located the Marine Biological Laboratory, which uses marine material in medical research, and to which scientists come from many parts of the world to work out experiments.

In large tanks at the United States Fish and Wildlife Service aquarium the private lives of shellfish and finny specimens are bared to the onlooker (page 153).

Close by is the Woods Hole Oceanographic Institution, which sends out laboratory ships to probe the secrets of the deep. A recent project was exploration of a submerged mountain range stretching from Iceland almost to the Antarctic. Co-sponsors were the National Geographic Society and Columbia University.†

Leaving Woods Hole after taking on supplies, we whisked through the Hole on a fair tide, safely past rocks on which a cabin cruiser had been wrecked a few days earlier. A spanking wind carried us briskly down Buzzards Bay, past New Bedford and Fairhaven, *Nomad's* birthplace, where she was launched by Major Casey. Major is the noted boatbuilder's unusual given name.

Nomad made such good time that we were off Newport, Rhode Island, our intended destination, by noon; so we kept her headed westward for Stonington and Mystic, Connecticut, leaving Newport for the return trip.

It was a fortunate decision, even if it meant the longest leg of the cruise—about 70 miles. We arrived as those communities were celebrating Stonington Town's tercentenary with parades and other festivities.

As we came in between Fishers Island and the mainland, Fishers Island Sound was white with sail of scores of small racing craft finishing a regatta in a dying wind.

Fishers Island is New York territory, but on a chart it appears to have gone adrift from

* See "Cape Cod People and Places," by Wanda Burnett, NATIONAL GEOGRAPHIC MAGAZINE, June, 1946.

† See, in the NATIONAL GEOGRAPHIC MAGAZINE: "New Discoveries on the Mid-Atlantic Ridge," November, 1949, and "Exploring the Mid-Atlantic Ridge," September, 1948, both by Maurice Ewing.

the parent State and grounded on the Connecticut shore.

We put in at the island's West Harbor, on a previous cruise to the New York World's Fair, and found rabbits and game birds so tame they were almost underfoot. The only shooting permitted on the island was target practice at the Army post, and wildlife seemed to know it.

Stonington Harbor is one of the best protected on the coast. Breakwaters staggered off opposite shores bar heavy seas, making it an unusually snug haven.

In the heyday of sail, near-by Mystic launched everything from clipper ships to gunboats.

Stonington now has one of the largest and best-equipped fishing fleets on the coast, largely manned by descendants of Portuguese who arrived on whaleships.

One of our first calls was at the studio of the portrait and marine painter, Griffith Baily Coale, one of the Navy's combat artists during World War II.

The Coale home, a big white structure nudging the main street, was built in 1765 by Capt. Amos Sheffield, a whaling skipper. Without outraging the original architecture, the artist has added a lofty studio to accommodate large canvases.

So strong is Coale's feeling for Navy tradition that, as we climbed a flight of stairs leading from studio to exit, he clapped a boatswain's whistle to his lips and expertly piped us "over the side."

"I do that for all my visitors," he said with a grin. "Glad to have you aboard!"

Coale is only one of many artists attracted to Stonington. James Abbott McNeill Whistler once resided here.

Williams Haynes, writer and president of the tercentenary celebration committee, drove us out to his home, built in 1750 by Paul Wheeler, veteran of the Indian wars.

Last of the Old Whalers

Mystic, three miles away, is part of the sprawling town of Stonington. There we found the Marine Historical Association busily reconstructing the venerable seaport and using as a centerpiece the whaleship *Charles W. Morgan*, more than a century old and the last of her kind (page 150).

The *Morgan* reputedly logged more miles and took more whales than any other ship of her time, bringing home cargoes worth more than $2,000,000.

The whaleship no longer is seaworthy. Her hull, graceful even in decay, has been bedded in sand and stone beside a wharf. Into an oil cask at the gangway visitors drop contributions to help save the old blubber hunter from irrevocable disrepair.

A more virile exhibit is the old square-rigger *Joseph Conrad*, which rises and falls with the tide beside the Mystic bulkhead, and appears sound and seaworthy. Having heard how the ship acquired her figurehead, I was particularly interested in examining the beautifully carved likeness of Conrad, the Polish-born author of *Lord Jim* and other sea stories (page 153).*

As the *Georg Stage*, this 156-foot frigate was launched in Copenhagen in 1882. For 52 years she sailed Baltic and North Sea waters as a Danish merchant marine training vessel. Alan J. Villiers, lecturer and author of many salty tales, bought the ship in 1934 and renamed her *Joseph Conrad*.†

Sailing his new property from Copenhagen to England to fit out for a two-year cruise, Villiers was accompanied by Bruce Rogers, American book designer. Rogers painted the new name over the transom, and offered to carve a figurehead and have it ready when the *Conrad* reached New York. Villiers accepted.

Hot Grog Served as Restorative

Mrs. Conrad, then living in England, supplied Rogers with portraits from which to work out his design. Rogers then modeled a clay head; from this he made a cast which he took to New York. There, in a hotel room, he labored at his wood carving from October to December, when the *Conrad* arrived at a Brooklyn shipyard.

For several days of zero cold, Rogers worked on a plank under the bowsprit, bolting the figurehead into place.

The dedication ceremony, held on an equally bitter day, was memorable. Despite the cold, about a hundred people listened to speeches by various dignitaries and Captain Villiers himself. Then all hands went below to thaw themselves out with hot grog.

The *Conrad* now wears a metal replica of Rogers's figurehead. The original is in the Seamen's Church Institute, New York City.

The windjammer served as a Maritime Service training ship during World War II. Then, by act of Congress, she was given to the Mystic museum and again is to a degree a school ship. Under the Marine Historical Association's program for youth education, she has become a floating classroom where

* See "Geography and Some Explorers," by Joseph Conrad. NATIONAL GEOGRAPHIC MAGAZINE, March, 1924.

† See "North About," by Alan J. Villiers, NATIONAL GEOGRAPHIC MAGAZINE, February, 1937.

Kodachrome by Robert F. Sisson

Nomad, Bound for a Blue-water Vacation, Rides a Quartering Breeze Across Cape Cod Bay

Square-Rigger Masts and Yards Piercing the Skies Recall Its Glory of Mystic, Connecticut in the Days of Sail

[illegible]

Nantucket's Old Windmill Reopens Annually to Tourists Brass and Pidgeon

Scientists Joseph Conrad Novelist Learn Lessons on the Subversive Book at Mosque

[illegible]

At Woods Hole Fishes Give Up Privacy For Science's Sake

[illegible]

White Slippers Glint on Nestor Yacht, Dingby Enthusiasts Admire Butterfly Wings on Catchbacon's Stung Harbor

[illegible]

From Gloucester's Good Harbor Beach Bathers Look Seaward to Twin Lighthouses on Thacher Island

Cape Ann's Old Red Sail Loft Jutting into Rockport Harbor, Ranks as "Motif Number One" for Artists

Weekly Regattas Decide Who's Best Among Lake Cord Sailors

[illegible]

Block Island's Legends Tell of Sea Tragedy and Buried Gold

Vernal, Sails Furled, Chugs Through Cape Cod Canal

[illegible]

Boom! Goes the Starting Gun, and Two Crews Race Up the Lake at Nessequoin

[illegible]

Yachts Crowd Marblehead Harbor, Once Home of Merchant Fleets

From [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Gay Head Cliffs, a Dazzling Surgeon of Clay, Gain in Beauty While Losing a Battle with Erosion

• "New England Has Everything!" Says Small-Boat Manufacturer

[illegible]

• Home from the Sea Is Mystic's Wooden Glamour Girl

[illegible]

youngsters, both boys and girls, study the rudiments of seamanship.

Hauled out on the Mystic River bank, not far from the *Conrad*, was the pinkie *Regina M.*, built at Lubec, Maine, about 80 years ago (page 151).

These popular double-enders were even used in the War of 1812. Shrewd Yankee skippers took advantage of the pinkie's shallow draft and lured British warships onto shoals. With the enemy ship helpless and unable to bring her guns to bear, the pinkie could lob at her with mortars.

When completed, Mystic seaport should be a maritime Williamsburg, Virginia. Along cobblestoned streets will be reconstructed shops of chandlers, coopers, blacksmiths, sailmakers, and the other tradesmen and artisans who kept the port's ships at sea.

In the museum's formal buildings are countless ship models, figureheads, portraits of ships and famous shipmasters, documents, logbooks, and tools of the whaling and sealing trades (page 164). It would require weeks to examine the contents of the Stillman and Mallory Buildings.

McKay's Pride Wrecked by Fire

In the Mallory Building, named for a famous Stonington shipping family, is the figurehead of the *Great Republic*, largest clipper ship ever launched. The builder, Donald McKay, thought she might also have been the fastest. But she was ravaged by fire before her maiden voyage and never restored to her original design.

Shouts and the sound of running feet sent us hurrying outside, where we could see, coming up the river and making the old port of Mystic live again, the lofty yards of a graceful brigantine.

No second glance was needed to recognize her as Capt. Irving Johnson's *Yankee*, even before he nuzzled her in to a berth astern of the earth-loaded *Morgan* (page 151). *Yankee*, a former German North Sea pilot boat, came to Johnson through the fortunes of war. He had recently sailed her around the world and was planning another ultra-globe-girdling cruise.

It will be his fifth such voyage; he made three in another former North Sea pilot vessel to called by the same name. The writer has reported Johnson's departures from and arrivals at Gloucester almost since he was lured away from a Connecticut Valley farm by the uneasy meadows of the sea.*

Now, between more ambitious voyages Johnson was leisurely cruising Long Island Sound with, as usual, a crew mostly of landlubbers.

Irving is no Captain Bligh, but when he ordered *Yankee*'s yards squared, even feminine members of the crew leaped to obey as if strung by a rope's end.

One of Stonington's most famous shipmasters was Capt. Nathaniel Brown Palmer, discoverer of the Antarctic Continent while on a sealing trip in the 44-ton sloop *Hero*. Of him, his shipbuilding father once said: "My house is Stonington, but Nat's is the world."

Newport More than a Pleasure Resort

We had an easy sail of about 40 miles to Newport, retracing our course of a few days past, until we picked up familiar Brenton Reef Lighted off the harbor entrance. The lightship is anchored in waters rich in yachting history, having served as one end of a starting line for countless races, including many of the America's Cup and Cruising Club of America ocean contests.

We tied up at the New York Yacht Club's abandoned Newport station, a biscuit toss from the center of the city. The glitter and polish of America's Cup days is gone and the old clubhouse is now used as a base for [illegible].

To consider Newport solely as a playground of the wealthy is to make a great mistake [illegible] but the old port has a much more substantial foundation than imported pillars and frieze.†

Once it was a greater seaport than New York, and it is still an important naval station.

Still standing are some 400 houses more than a century and a half old. These include the headquarters of Charles Louis d'Arsac, Chevalier de Ternay, admiral of a French fleet in the American Revolution.

Our call at his headquarters was particularly fortunate, for workmen employed by the Preservation Society of Newport County were engaged in restoring the stately structure (page 164).

They were stripping off a dozen or so coats of paint which had concealed beautiful panelled walls, and removing away plaster [illegible] pre-Revolutionary tile bordering the numerous fireplaces. They worked so skillfully that carved cherubs retained their original rosy complexions after layers of paint were removed.

[illegible] admiral, whose paternal grandparents [illegible] to France from Ireland, is buried in the yard of Trinity Church, built in 1725 by

* See "Index, 1949-1959," for articles by Irving and Electa Johnson, particularly "The Yankee's Wooden world," January, 1958.

† See "Rhode Island Model City-State," by George W. Lane [illegible], August, 1948.

On a National Geographic Map, School Children Trace the Pearl Sources of the World

At Woods Hole, [illegible] U. S. Fish and Wildlife [illegible]

St. Paul's [illegible] one of the oldest [illegible] colonial churches in America. George Washington is said to have worshiped here.

The Preservation Society [illegible] open for public inspection [illegible]

Old Tower Defies Explanation

We turned at length [illegible] the mysterious old stone tower in Touro Park [illegible] origin. One of the most popular theories was that the Norsemen built it [illegible] Portuguese [illegible]

However, archaeologists [illegible] could not [illegible]

[illegible] Arnold, Rhode Island's first governor under the charter of Charles II [illegible]

[illegible] Newport [illegible] on its history [illegible] local headquarters for the Red Cross.

Red Cross workers told us the house was built by a Captain Littlefield when he married [illegible] later it served as the [illegible]

Governor Charles Van Zant, in the days when Rhode Island had two capitals, one in Providence and the other in Newport.

Van Zant, depressed by a view of a tiny graveyard outside his windows, had the stones turned under. Preservation Society employees were even then restoring the little cemetery. One of the stones they had re-erected bore the name of Governor Arnold.

Next door to the former governor's mansion is the Prescott House, built by the smuggler John Bannister about 1750. Bannister's occupation then was known more tolerantly as "free trading."

In 1777 the big house became headquarters of Gen. Richard Prescott, the British occupation army's commander.

Named for Heroic Lightkeeper

Prescott's eventual capture, in his nightshirt, was a bitter embarrassment for the glittering officer, but a matter of considerable satisfaction to Quaker residents, who disliked having to doff their hats in his presence.

Entering and leaving Newport Harbor, we passed an attractive white lighthouse which serves both as navigation beacon and as quarters of the Ida Lewis Yacht Club.

The club took the name of a heroic woman who during many years as lightkeeper, from 1858 to 1911, saved 23 lives. Congress voted her a gold medal, and she received many other awards in recognition of her heroism. Her most treasured possession probably was a silver teapot presented by soldiers stationed at near-by Fort Adams, nine of whose lives she saved.

We left Newport on a blustery afternoon with small-craft warnings whipping from the Ida Lewis flagpole; but the wind [illegible] before we reached Mattapoisett, [illegible] poked into that harbor in the dark.

Because we wanted a dawn start for Provincetown, all hands turned in early. The morning broke fair but chilly, making a hot breakfast doubly appreciated as we turned east through the canal under power. The Army Engineers frown upon sailing through the [illegible].

After stopping briefly at a canal-side gasoline station for fuel, ice, and water, we sailed out across Cape Cod Bay. Soon the Pilgrim Monument pierced the horizon ahead, furnishing the finest kind of landfall. That graceful stone structure towers 350 feet above sea level, commemorating the fact the Pilgrims landed at Provincetown before moving across the Bay to settle in Plymouth (page 158).

Our annual pilgrimage always includes a visit to the Provincetown Playhouse and its director, Miss Catharine Huntington, a pioneer in the little theatre movement. We found Conrad Aiken there and with him saw his new play, *Mr. Arcularis*.

The theater is on Provincetown's oldest wharf, used by the last of the port's whalers. It is a Playhouse tradition to open each season with a play by Eugene O'Neill, whose genius was brought to light in a Provincetown fish-house which had been transformed into the Wharf Theater.

While at "P'town" *Nawad* remained comfortably berthed at the long steamboat wharf, except during the afternoon visits of the Boston steamer, when she had to move briefly.

Provincetown has an important and lively colony of artists and writers. Exhibitions are open throughout much of the summer. Also worth visiting is the Historical Museum. In addition to a wide variety of antiquities, it contains an Arctic collection of Commander Donald B. MacMillan, assembled during his many voyages to the North.

The noted explorer is a resident of Provincetown when not voyaging in his schooner *Bowdoin*, which was the case during our visit. He was a member of the expedition on which Peary discovered the North Pole.*

Departure from Provincetown for Gloucester, 50 nautical miles across Massachusetts Bay, was made in another bright dawn. It was the only leg of the cruise during which we were beyond sight of land for an appreciable time. There wasn't much weight to the breeze and the sea was smooth, so we set a big, light jib and made such satisfactory time that we sighted the high land of Magnolia and Eastern Point Light early in the afternoon.

Reef of the *Wreck of the Hesperus*

Soon we entered Gloucester's beautiful and picturesque harbor (page 159), between the breakwater and the reef of Norman's Woe, made famous by Longfellow's *Wreck of the Hesperus*.

On the port hand was the medieval castle of John Hays Hammond, Jr., the inventor; to starboard, magnificent Eastern Point and East Gloucester summer and year-round homes, and Tetepond Island, reputedly purchased from the Indians for that amount.

Cape Ann, in rugged contrast to sandy Cape Cod, is almost solid rock. And in the center of the 36-square-mile area is a desolate tract known as Dogtown Common, where huge

* See, in the NATIONAL GEOGRAPHIC MAGAZINE, by Donald B. MacMillan, "Peary as a Leader," April 1910, and "MacMillan Arctic Expedition Returns," November 1914; also "A Naturalist with MacMillan in the Arctic," by Walter N. Koch, March, 1925.

Under Skilled Hands a Miniature Windjammer Takes Shape

[illegible]

[illegible]

[illegible]

[illegible]

Near by, in his sail-loft studio, Lawrence O'[illegible] [illegible]

[illegible] Gloucester [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

He was the first to [illegible] Gloucester [illegible]

Both [illegible] schooners [illegible] the fishing [illegible] in the West Indies.

[illegible] National Geographic Magazine, September [illegible]

On all our previous visits we had seen the Hammond castle only from the water. Now we went over to examine it, and found the great stone pile serving both as a museum and as the noted inventor's laboratory. From it, some years ago, he astonished Gloucester by radio-directing a powerboat into and the harbor. Many of his almost countless inventions aided the country in the war.

Castle's Materials from Europe

In constructing the castle, Hammond imported doors, windows, sculpture, and furniture from Europe. Roman, Gothic, and Renaissance art are intermingled. Surrounded by tall pines, the towering gray structure resembles a castle on the Rhine.

Hammond has installed a fine organ in the great hall, built like a church transept. Here noted musicians perform. The museum sections are open to the public in the summer.

The Church of Our Lady of Good Voyage is a Gloucester landmark, fashioned after a church in the Azores. Most of its congregation is Portuguese or of Portuguese descent. As evidence of the worshipers' close association with the sea, the statue of the Lady between the twin spires holds not the Christ Child but a model of a fishing vessel. On the church's carillon—the first modern carillon brought to this country—concerts are given during the summer.

Artists can be found on almost every wharf and rocky promontory around Gloucester. Motif number one is an old red sail loft at Rockport, said to be the most often painted building in the country (page 157).

A Coast Guard picket boat took us through the Annisquam Canal, which makes Cape Ann an island, to watch the start of the Annisquam Yacht Club's Squam Day Regatta (page 161).

More than 80 racing craft made Ipswich Bay white with their canvas. The bay also is a popular sport-fishing center; record tuna have been taken there.

Leaving Gloucester, we had only one remaining call to make, but an important one. This was Marblehead, conveniently on the route back to Boston.

So we steered for Halfway Rock, at which mariners departing Salem and Marblehead in the old days tossed coins to purchase fortunate voyages. There must be a goodly amount of small change about the base of the Rock, but the water is too deep for profitable investigation.

Marblehead's deep and roomy harbor was as usual crowded with yachts (page 162). Time was when the town fathers, fearful that Marblehead might be supplanted by New York in maritime importance, vainly argued measures to avert such misfortune. But Marblehead retains another claim to fame, as one of the world's yachting capitals. In 1947 a record of 522 starters in a regatta was established.

The old town was in gala spirits, observing a rather unusual tercentenary—not the 300th anniversary of its founding but of its separation from neighboring Salem. Marblehead was settled some 20 years earlier than the festive date.

Birthplace of Our Navy

Marblehead disputes with near-by Beverly the title of birthplace of the American Navy. The first vessel commissioned by General Washington was the schooner *Hannah* of Marblehead, commanded by a Marblehead captain. She was, however, fitted out at Beverly. So there should be glory enough for both.

Jack Breed, who resides in Marblehead when he is not away making photographs for the NATIONAL GEOGRAPHIC and other magazines, drove us around the narrow, winding streets.

Our progress was hampered by a parade of ancient fire-fighting apparatus, assembled from a wide area of New England for the tercentenary celebration.

We visited the old, round, brick powder house built in 1755, which supplied Washington's troops. Quite appropriately, the original of the painting, *The Spirit of '76*, hangs in the Townhall.

In midafternoon we sailed leisurely along the North Shore to Boston, lacing on *Nomad's* sail covers for the first time in three weeks and, according to the cabinet's reckoning, for the first time in 700 miles.

INDEX FOR JANUARY-JUNE, 1950 VOLUME READY

Index for Volume [illegible] (January-June 1950) [illegible] will be mailed upon request to members who bind their copies as a ready reference.

Seven Sprites Play at Seven Springs, Likely Source of River Tibures

[illegible]

A Stroll to London

By Isobel Wylie Hutchison

With Photographs by National Geographic Photographer B. Anthony Stewart and Others

ON A SUNLIT day of March I set out from my home near Edinburgh to walk to London, a distance by the shortest route of 380 miles. But what stroller takes the shortest route? My walk would be a goodly stretch of over 500 miles in 38 days.

On the 39th day I had a date in London with National Geographic photographer B. Anthony Stewart, who would retrace the journey with car and camera.

I planned, keeping to the hills, to cross the English border at Gretna Green, join the Pennine Chain near the Roman Wall, and follow England's spine to Derbyshire (map, pp. 184-5). Thenceforth, in the entertaining company of Boswell and Johnson, George Eliot and Shakespeare, I would find my way to Lichfield, Nuneaton, and Stratford on Avon.

There I planned to diverge through the blossomy Vale of Evesham to pick up the Thames at its source near Cheltenham or Cirencester. Both cities claim parentage of the stream (page 202). I hoped to follow it right into the beating heart of London. With my sister accompanying me for the first 18 miles, I set out in high hopes (page 173).

An Old Road Leads Across Lonely Moorland

The old road from Edinburgh to Lanark hugs the north side of the Pentland Hills through a stretch of bleak moorland. With Arthur's Seat and Castle Rock [illegible] clouds on the Edinburgh skyline,* a fingerpost of the Scottish Rights of Way Society indicates the old Cauld Stane Slap drove road which cuts across the hills from north to south.

The track led down to the infant Water of Leith. The steppingstones being covered, we removed shoes and stockings, planted flinching feet in the icy stream and waded over.

At Harper Rig Reservoir, which is part of Edinburgh's water supply, we inquired the way of a shepherd, for the path had disappeared. In a high pitched shout, like one used to converse with distant sheep [illegible] he told us to make for a post between two heights ahead. It was eight and a half miles to West Linton.

"But it'll take you all of three hours," he shrilled after us, above the excited barking of his dog.

It was the season of heather burning, and the tang of smoke was in the air. Only sounds to be heard, the bleat of sheep and the calling of curlews, seemed to emphasize the quiet of these black and sober heights.

We met no human being till we came down the southern slopes to West Linton and the road to Habie's Howe. There Allan Ramsay wrote his pastoral *The Gentle Shepherd*, little thinking that it would one day land him on a pedestal in Princes Street Gardens, Edinburgh (page 152), wearing round his brow a headdress much resembling a wet towel!

There was ice on the pools when I looked out next morning but the frost proved merely a March frolic and the day soon became hot as summer. Alone I took the main thoroughfare to Moffat. Though heavy traffic thundered, I saw few private cars save in a funeral procession of 17 sweeping down the valley from a white farmhouse.

I slept that night in a room I had engaged at the Crook Inn, halfway between West Linton and Moffat. Because I had imagined it a small place with little accommodation, I was surprised when the door into its luxurious lounge was opened by a page in a white jacket looking for my luggage!

I swung it off my shoulders with a sigh of relief, for I was beginning to find my pack no ponderous companion. Next day at Moffat I bought a handbag and divided it.

First Offer of a Lift Declined

"Are you walking for walking's sake, or would you like a lift?"

It was my first offer, and it came, shortly after I had quitted Crook Inn and breakfast, from a lady driving a small saloon.

Since the day was young and my pack still light, I thanked her and said I was walking for walking's sake.

I seemed at that early season to be the only person in Scotland thus occupied. But for the Youth Hostels Association, Britain seems to be losing the use of its legs. This energetic body provides for members cheap board and lodging in a chain of hostels, often charming old mansions from Land's End to John o' Groats, the only rule being that they must arrive on their own steam, whether it be on foot, on cycle, or by canoe.

* See, in the NATIONAL GEOGRAPHIC MAGAZINE, "Homes and Land, Postwar Style," by Isobel Wylie Hutchison, May, 1946; and "Edinburgh, Athens of the North," by J. R. Hildebrand, August, 1952.

It was 16 miles to Moffat, and the road climbs to 1,400 feet. Nevertheless, I was glad I had resisted the temptation to ride. So magnificent was the scenery. Near Tweedsmuir, home of the late John Buchan's boyhood and the name he took when raised to the peerage as Governor-General of Canada,* I crossed the Tweed, a noisy stripling leaping half-grown from its well in the hills above, to visit the late Dr. William Shillinglaw Crockett's church on its tree-fringed knoll.

This poet and historian of the Covenanters' country was also known in America and Canada. A tablet on the walls of the little church commemorates his jubilee as its minister.

Snow posts marking the highway led me up to the famous Devil's Beef Tub on the heights above Moffat. A roadside cairn reminded me of my unusual good luck in enjoying brilliant March weather; for here, in a great snowstorm in February, 1831, James M'George and John Goodfellow, guard and driver of the Edinburgh-Dumfries mail, perished in a heroic struggle to bring the mailbags through.

In the old churchyard of Moffat, where these gallant postmen are buried, lies also John Loudon McAdam, whose name is immortalized by the type of road he popularized.

A charabanc from Blackpool had just scattered a load of Easter trippers, like bright butterflies, around the memorial to John Hunter, a Covenanter who was shot near the spot in 1685. The kindly accents of Lancashire were borne to me:

"Come on, Mother, come and see where the jocks used to keep the meat cuddy."

"She can't come. Arrr, she's wearin' 'er bedroom slippers! She'd fall down them places!"

But the old lady was helped out, slippers and all, and taken to the brink of the vast cauldronlike Beef Tub, hemmed by steep green walls about 600 feet high. Here it is said the Scottish reivers (raiders) used to hide the herds of fat cattle they had filched from their neighbors across the border.

From the Tub the road spirals down like a revolving picture gallery to the pleasant spa of Moffat, noted for 250 years for its sulphur wells. A fountain in the market place, surmounted by the life-size statue of a ram, appropriately reminds visitors of a benefactor to whom this sheep-farming neighborhood also owes much of its prosperity.

By the old Carlisle road to Wamphray, an unfrequented and beautiful highway, I followed the Annan next day, rejoining the main road about six miles from Lockerbie.

It was an unpleasant six miles. There was no footpath (for who needed it?), and at frequent intervals lorries hurtled past, carrying prefabricated houses which by next nothing would probably be filled with families whilst breakfast cooked in the kitchens!

Where Lies Scott's Favorite Heroine

What, I wondered, would Jeanie Deans have said to these? Before quitting Scotland, I had a special pilgrimage to pay to the little kirk of Irongray near Dumfries, where Sir Walter Scott's favorite heroine is buried.

Jeanie's real name was the very appropriate one of Helen Walker. In 1737 she walked barefoot to London over the rough and dangerous roads of that time, accomplishing her journey in 14 days, to intercede for her sister's life.

She sleeps beside the Cluden Water under a stone with a rather weighty epitaph, both the gift of Sir Walter. Here, following a track beaten through the grasses by her many admirers, I found her on Easter Sunday (page 174).

The church was thronged for Easter, for Irongray—once a center of the studs of the famous Galloway nags—lies in the heart of the Covenanters' country, and the blood of the Covenanters still pulses in the veins of its parishioners.

"Upon an oak-tree near the kirk of Irongray, at the foot of which they were buried," Edward Gordon and Alexander MacCulloine were hanged in the dark year 1685 for refusing to abjure their religious convictions.

"Both died," said Scottish historian Robert Wodrow, "in much composure and cheerfulness," leaving their wives and babes "upon the Lord and to His promise."

I came quite suddenly upon a statue of Thomas Carlyle, the genius of Ecclefechan. There he sat, head on hand, gazing thoughtfully from an eminence down the winding road into the village. The two-storied house where he was born in 1795, son of a stonemason, now belongs to Scotland's National Trust.

At near-by Craigenputtock, where *Sartor Resartus* was written, Emerson visited the sage, and with Emerson's help, in 1836, the work appeared for the first time in book form in America.

The Carlyle house contains many interesting relics, including two of his wide-brimmed hats—a black felt and a battered straw. Seizing a moment when the attendant's back

* See "Tweedsmuir Park: The Diary of a Pilgrimage," by the Lady Tweedsmuir of Elsfield, National Geographic Magazine, April, 1938.

Mr Monsieur Xavier Strolls Along a Scottish Lane Between Edinburgh and London

[illegible]

Miss Hutchison Makes a Pilgrimage to the Grave of a Famous Scotland-to-London Walker

[illegible]

Yorkshire's Glorious Moors and Boulders Inspired the Brontë Sisters

Scott "Popped the Question" to His Intended at the Popping Stone

"What! Walked from Scotland! Whatever Did Ye Do That for, Dear? Did Ye Miss t'Bus?" Bus-

Gretna Green's Marriages over the Anvil Are No More

Sewing Kit, Tea Cozy and Car Are Comforts of a Kitchen

Norham Church, Flotsam and Jetsam, and Wandering Lane Left Were Artists Love Chase Wickham

A Farmer-Veteran in His Old Uniform Decorates Sunday in His Parlor

A Mechanic Installed Storm Covers a Tractor in Sunday's Work

Glass Houses of Vegetable Marrows Plants Cover a Field in Excellent Like Beds of an Acre

Walking Through the Vale of Lucerne, the Autour Moves Lose Racing Greyhounds

was turned, I put on the black one and wished a wish.

It seemed the right thing to do, so I put far away is the Gretna Green blacksmith shop where visitors write their names and make wishes; and in Irthing Valley just across the Border is the Popping Stone where it is said Sir Walter Scott sat when he "popped the question" to Charlotte Charpentier and got his wish (page 175).

At Lockerbie there is a good hotel whose manager, an expert angler, will take a visitor out to the Annan and help him to catch a salmon trout, or maybe a salmon, for his supper. But if asked for a venison, the manager will send him to Lochmaben. Like Robert Bruce, who may have been born at Lochmaben Castle, this little fish has brought fame to the region.

Romance Lingers Around Gretna Green

> How far, how far to Gretna?
> Two score and ten miles away,
> And chaise and-four will nevermore
> Have done a mile the way
> But we ride the Carlisle road
> Where lire and love have been
> I hear upon the hearing hoofs
> Gretna Green.

Dusk was falling in the "long, low dining room" admired by Charles Dickens when he visited Gretna Hall in 1852, as I sat after supper and read these lines in a little book which relates the romantic history of this famous mansion. Built in 1710, it became the goal of pilgrims of the upper classes anxious to marry in haste and repent at leisure.

Under a now obsolete Scots marriage law, "where a single man and woman declare themselves husband and wife in presence of two witnesses, they are in fact legally married." There were many "priests" around the Border villages who married couples under this old law, though they were not necessarily blacksmiths. The blacksmith item is a modern innovation unknown to stagecoach days (page 177).

One famous "priest," David Laing, had a very different career, for he was captured by a press gang and forced to serve in the British Navy. But his vessel was seized by John Paul Jones.

When the Father of the American Navy raided his native Solway Firth, Laing was compelled to accompany him. But Laing knew Solwayside as well as Jones, the gardener's son from Arbigland. One dark night he escaped.

Changing his role of sailor to that of "priest," Laing conducted marriages at Gretna Hall till his death in 1827.

One of the marriage registers of that date, recovered at a London auction in 1912 for £420, contains 1,154 entries between 1825 and 1855.

The firelight flickered on the walls around me, lighting up cartoons of famous lovers of the past: John Peel of the rousing hunting song, who in 1797, forgetting hounds and hunt, carried his sweetheart, bonnie Mary White, to Gretna; Prince Charles Ferdinand Bourbon, who married Penelope Smythe of County Waterford, "reputed to be the most beautiful woman of her time." She was also (though one hopes Prince Charles did not know about [illegible]) heiress to £30,000.

Here, too, came 22-year-old Archibald, Lord Dramlanrig, heir to the Marquess of Queensberry, to espouse 17-year-old Caroline [illegible], daughter of General Sir William Robert Clinton. "The gods," it is said, "smiled on this romantic union," and the pair lived happily ever after at Kinmount close by, "loved and respected by all."

Equally happy was the union of Lady Maud Villiers, beautiful daughter of the Earl of Jersey, to Capt. C. P. Ibbetson of the 11th Hussars, though she was pursued to Gretna by her irate father.

A few years later, on August 26, 1847, "when the harvest moon hung low in the sky," the Duke of Sforza Cesarini, "a direct descendant of Caesar and related to all the sovereign houses of Europe," was married here to Caroline Shirley of Chartley Castle, Staffordshire, apparently without pursuit, for the pair "remained at the scene of their romance for several days." I wondered if they had visited the Roman Wall, as I was about to do, and if Caroline had found the Duke's Roman affections as lasting as that astonishing piece of masonry!

There was still no sign of my hostesses when at last I crept rather hurriedly through the dark hall and up the stairs to my bedroom and shut myself in. As I closed the door, I recollected an unpleasant ghost story about someone who had done just that, and immediately had heard a thin voice among the bed curtains say, "Now we're shut in for the night."

Anything like that might have happened in my bedroom, which was a romantic apartment lighted only from the roof and hung about with curtains. I got into bed hurriedly and fell asleep, only to be wakened by a persistent knocking and by what seemed a cry from the romantic past of "House! House!"

It was merely an early bird hopping on my skylight and the wind whispering to the old yew tree in the garden. The tree has watched

Close to Northend's Home Lies Princes Street

[illegible]

so many lovers come and go that it has at last decided to bloom in itself.

Roman Wall Ruins Still Draw Travelers

The Romans, who occupied Britain for some four centuries, have left as their most remarkable monument in these islands the great Wall, 73 miles long and [illegible] feet high [illegible]. It was built during the reign of the Emperor Hadrian [illegible] great duke of Lancaster took the White Sill of northern England, from Lancaster [illegible] way. Its ruins draw travel[illegible] and scholars from all parts of the world.*

I visited it from Brampton, a pleasant market town in Cumberland, where I passed my [illegible] in England. In the 45 rising its mayor unwittingly presented the keys of his town "on bended knee" to Prince Charlie.

The Prince [illegible] indirectly responsible for the destruction of a section of the Wall, which was pulled down by the opposing general to [illegible] a road for his cannon.

Many old houses near the Wall, including much of the beautiful 12th-century Lanercost Priory, are built of the square Roman stones whose masons have left their names behind [illegible] near Birdoswald.

* See "The Roman Wall," by [illegible] booklet [illegible]

Gordon, Ace of Carrying Mail, the Local Postman, Makes His Daily Rounds

[illegible]

[illegible] Wall of Honourable [illegible] Regiments [illegible] the National Dress. All Highlanders [illegible] it is small [illegible] Highlanders [illegible] kilt to the shops and temples of the camp followers—even the [illegible] where a skeleton was found with the knife blade still fast in the victim's ribs.

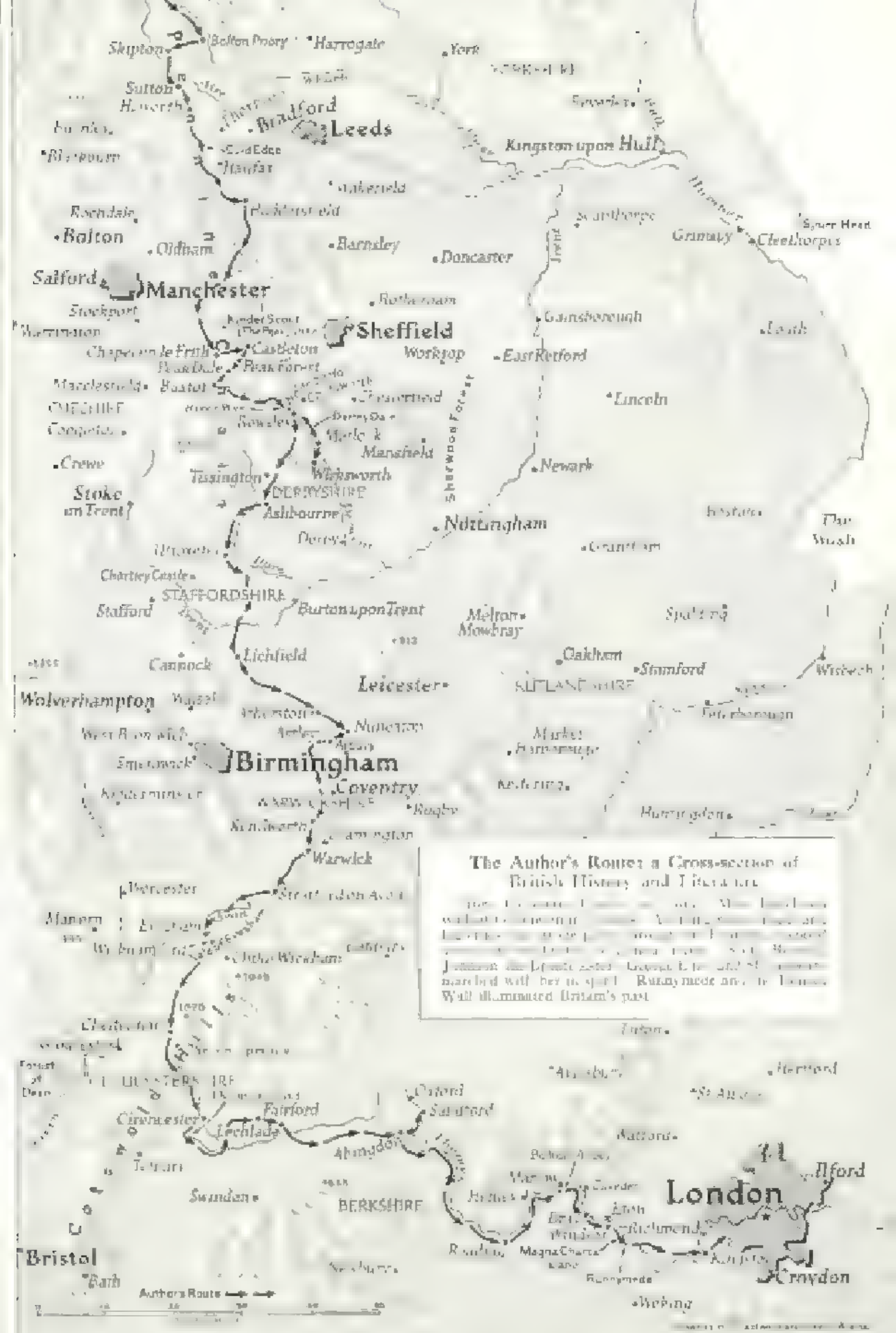
[illegible] he is the armorer's forge, with its [illegible] fuel and supply of [illegible] which has lasted [illegible] two [illegible] years.

The views over the Border mountains from the Wall are spectacular, but sale [illegible] were out on the day of my visit, and [illegible] bunks [illegible] grass. I was [illegible] to [illegible] who have slept watch on such bitter ramparts.

[illegible] and dropped, but [illegible] to accept the [illegible] from [illegible]

* See [illegible]


Kirkcaldy
Firth of Forth
Falkirk
Leith
Edinburgh
Glasgow
SCOTLAND
Eyemouth
Berwick
Alnwick
Cheviot Hills
Ashington
Blyth
Newcastle
Wallsend
Gateshead
Sunderland
Consett
Durham
DURHAM
Bishop Auckland
Barnard Castle
Darlington
Solway Firth
Maryport
Workington
ENGLAND
Kendal
Dalton in Furness
Morecambe Bay
Lancaster
Irish Sea
Blackpool
Preston
Burnley
Blackburn
LANCASHIRE
Southport
Bolton
Wigan
Manchester
Oldham
Bradford
Leeds
Barnsley
Route continued on next page
Orkney Islands
John o'Groat's House
SCOTLAND
North Sea
Left Page
Right Page
IRELAND
WALES
ENGLAND
FRANCE



The Author's Route: a Cross-section of British History and Literature

[illegible] Will illuminated Britain's past

Tennessee-Wisconsin Dames at Lower Falls, Chippewa River, Lumland

[illegible]

[illegible]

Wafted Along by a Blizzard

[illegible]

[illegible]

Above His Native Market Place, a Once-eloquent Genius Meditates in Stony Silence

[illegible]

[illegible] said. "[illegible]

A [illegible] over a [illegible] at Langdon Beck Hotel. I wondered [illegible] to the weather after all. Six weeks later Mr. Stewart [illegible] with mountain [illegible], [illegible] marigolds, cuckooflowers, and the [illegible] *Primula* [illegible] 1911) and spent a happy afternoon amid the Dale folk, of whom the saying goes, "They'll summer you and they'll winter you, and then they'll take you in."

I slept that night at High Force Hotel, near which the Tees [illegible] over basaltic crags into a [illegible]. The [illegible] of the cataract [illegible] through [illegible] home of the red squirrel.

[illegible] and [illegible] I never [illegible]. When I [illegible] still, [illegible] would [illegible] up to [illegible]. He [illegible] dropped some on the path, and squirrel he finished it; so after that I used to have him for cream regular."

Snow lay next morning in the yard of the hotel, once a ducal shooting box patronized by King Edward VII, [illegible]

as I passed on down Teesdale to Barnard Castle. Here the river, carving under the old bridge, girdles the ruins of Bernard Baliol's 12th-century fortress, around which Sir Walter Scott wrote the poem *Rokeby*.

Dickens too is associated with Barnard Castle, which owns one of the best provincial museums in England. He visited it in 1838, and wrote part of *Nicholas Nickleby* in the old Kings Head Hotel.

There are few old bridges left now in England, but one crosses the Tees near Rokeby. For a halfpenny I reached the farther bank and the ruins of the 12th-century Egglestone Abbey.

On the monks' little packbridge close to the modern highway I met the Rokeby gamekeeper, a man of many enemies, such as poachers, magpies, and weasels, and a few friends. One of the latter, a red squirrel, watched me next morning from a branch with his large brilliant eyes as I went down Brignall Banks reciting to myself Scott's ballad:

> [illegible] Banks are fresh and fair,
> [illegible] woods are green,
> [illegible]
> Than when our Forest queen

A Prison of Mary Queen of Scots

I thought of the lines again two days later when I came to Castle Bolton in the Ure Valley, where the hapless Mary Queen of Scots spent the first seven months of her 19 years' imprisonment in England.

The way to Bolton led me over high lonely moors. From the magnificent distance of these high tops I descended into one of the loveliest of the Yorkshire dales, Arkengarthdale, with its stone-walled fields, little gray village, and old bridge. The Arkle Beck tumbles into the Swale near Reeth, a picturesque town of Yorkshire's North Riding, set around a wide green.

I slept that night at Grinton Bridge Hotel, overlooking the Swale, and next day crossed bleak moors to Redmire, in the wake of Queen Mary and her retinue of 40. My path, like hers, apparently bristled with secret dangers, for the moors above Redmire are a War Office range.

When the red flag was flying, a notice warned that it was dangerous to proceed. But I had already proceeded about a mile before I saw a tattered red flag flapping dismally from a post.

"Go back! Go back!" shouted a grouse, springing up from the burnt heather.

I regarded the emblem, however, as a war relic and proceeded. I came to a larger, even redder, flag, and beyond it another warning.

The path ran downhill now, and among the trees I could see the strong towers of Mary's prison. I passed on past a quarry where yet another notice warned me not to proceed when the signal on the slag heap was set at "Danger," as "shot firing" was in progress.

When I recounted my adventures that afternoon at Street Head Inn, Newbiggin, on my way across the pass into Wharfedale, the postman withdrew his head from a foaming tankard to shake it at me and remark solemnly:

"Yo've coom a very dangerous way if you've coom over Redmire when t' red flags were up. In fact, you're lucky to be 'ere at all!"

He took another enormous swig. Indeed I believe he is doing so at this moment, for when I returned six weeks later to the same delightful hostelry, there was the same postman in the same seat, apparently quaffing the same tankard of ale! (Page 183.)

Wharfedale, says Baedeker, is "the finest of the Yorkshire dales and one of the most beautiful valleys in England."

Between the lovely old church of Hubberholme and the ruins of Bolton Priory there lies a succession of picturesque stone-tiled villages, the delight of anglers and artists. I passed the night at Kettlewell and came down the riverside next day by a woodland path, past the famous Strid.

Here the river narrows to a few feet, surging between rocks, and here (says legend and Wordsworth) young Romilly, "the noble Boy of Egremound," was drowned whilst attempting the jump.

> The grey-hound in the leash hung back
> And checked him in his leap.

His sorrowing mother decreed that in his memory there should rise

> In Bolton, on the site of Ward,
> A stately priory.

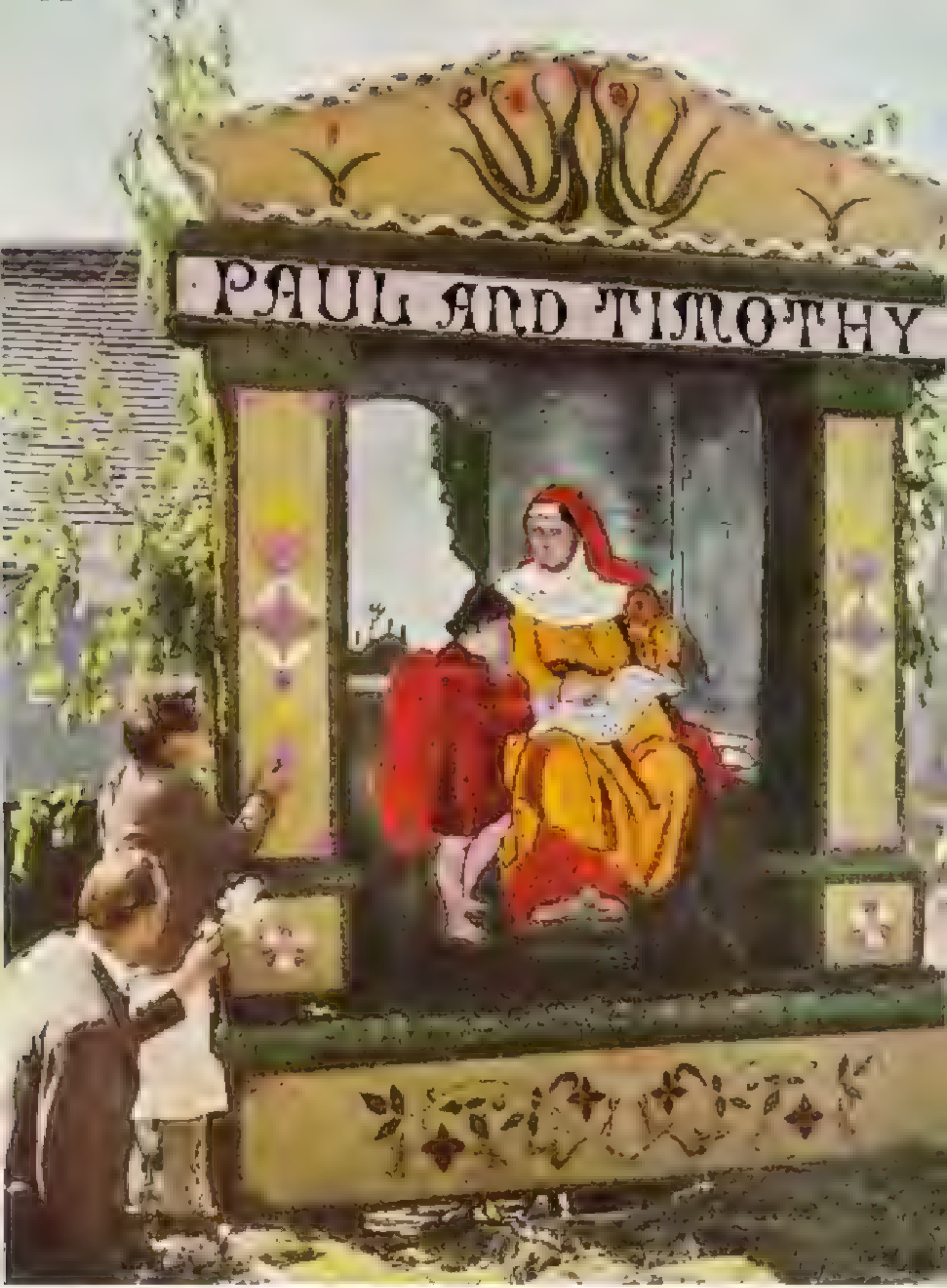
Its fine ruins still stand in the meadow close to a footbridge and stepping-stones, the delight of picnic parties.

In a hotel close by I had salmon trout for dinner, and afterward in the lounge listened [illegible] only to two fishermen discussing with great earnestness the very queer contents of a trout's stomach.

Brontë Country Grim as *Wuthering Heights*

Next morning it was raining, but the weather seemed to suit the day, for I was bound for the Brontë country. Beyond Airedale, home of the well-known breed of dogs, the moors change color and darken above their hard foundation of Millstone Grit.

Gone Are Warwick's City Walls, But East Gate Survives. It Means "Gateway" In Its Language



Wicksworth, Where Water Is Scarce, Contrives Precious Wells with Flower Pictures

[illegible]

Shakespearean Actors Rehearse on the Site of the House Where the Poet Died in 1616

[illegible]

Roadside Wildflowers Brightened the Journey of the Botanizing Author

[illegible]

A Cyclist Family Picnics Beneath Fragrant Hawthorns in the Cotswolds. Cheltenham's Spires Loom in the Distance

Wives and Pets Love Wherever the Bargemen Go — Brass and Paint Stove to Make Each Floating House the Sweetest

Grassy Parks Which Saw the Deer and Heard the Hunting Horn Now Know the Plough and the Workhorse

Many Members of the Women's Rural Institute Revive a Folk Dance on the Lawn of Stanford Dingley Abbey, Berkshire

Through the Window, a Statuette of the Cross, the Vicar of Brux Reads His Prayer Book

I got a lift to Skipton, where Longfellow's uncle is buried, but as I labored up the steep hill out of Sutton village, some miles farther on, furious onslaughts of rain harassed me. As I was blown down an almost perpendicular slope on the other side, the freakish sun lit up as if by electricity, and the "dark satanic mill" in the hollow lured me to sit down by the mill stream and eat the pork pie I had bought in Skipton for lunch.

On again—pork pie notwithstanding!—blown now by winds from every quarter, to another height which showed me Haworth straddling the opposite slope, topped by its square-towered church.

After another grim climb I reached the church and sat down to rest under Charlotte Brontë's window, gift in 1883 of publisher George W. Childs of Philadelphia. In the church is the Brontë vault, where one by one every member (except Anne) of this gifted but fated family was untimely laid.

The grim parsonage where Charlotte, Emily, and Anne spent their short lives (they were born at Thornton in Yorkshire) is now a museum, the property of the Brontë Society. With other valuable Brontë relics it houses the collection made by the late Henry Houston Bonnell of Philadelphia. It has been placed here for exhibition as "recognition of the high appreciation of this gifted family by the English-speaking people on both sides of the Atlantic."

I slept that night in the Brontë Guest House, where my sole companion was a young girl. She was writing a novel centered around Emily Brontë's *Wuthering Heights* (the Withens). Springing barefoot over the rough moor like some reincarnation of Cathy Heathcliff, the writer led me in late twilight past the Brontë Waterfall and the Brontë Chair (a stone shaped like a seat—page 175) to the derelict building of the Withens, which still stands abandoned on the height of the moor.

Peering into its dark and broken chambers, we seemed to hear the ghostly fingers of Catherine tapping on the window.

My way next morning led over another razorlike ridge appropriately named, on my map as "Cold Edge." It was the old coach road to Halifax. Here and there I came on stretches of pavement amid the heath and at last, quite suddenly, on a little public house overlooking the valley.

The jolly landlord was brewing tea in his kitchen. He made me sit by a welcome fire whilst he filled an enormous mug of the potent beverage for me, talking the while in the loud voice of one accustomed to outcry the wind.

"It's the wind that's our enemy here, not the snow or the rain," he shouted.

In World War I he had fought with the Gordons, but his heart was in his native Sherwood Forest. "You miss the trees up here," he said wistfully. "If I was younger, I'd emigrate."

Presently his wife returned from her shopping expedition in the valley and stood back in surprise to find a visitor in her lonely kitchen, for few came that way over the abandoned road, save the ghosts of dead and gone postilions.

I walked on for many miles, uphill and down dale, after passing Cold Edge. The little inns in this neighborhood are mere roadhouses and do not cater to overnight visitors. At last I was obliged to take the bus to Huddersfield to find a bed.

Next day, again traveling over the tops of high hills, I crossed a corner of Cheshire and looked down upon the reservoirs which feed Manchester lying in the bottom of the valley. Beyond them lay the high plateau of the Kinder Scout in Derbyshire, from which the Pennines decline gradually into the green plain of central England and roll to a stop in the Vale of Trent.

Where Izaak Walton Fished

Derbyshire's loveliness is one of high bare hills, hazy distances, and steep gorges. Through its porous limestone rocks water sinks away, bubbling up in deep subterranean caverns and lead mines which were worked by the Romans. Its three rivers, the Derwent, the Derbyshire Wye, and the Dove—beloved of Izaak Walton—are famous trout streams.

I spent a week walking through Derbyshire, for I had now traveled nearly halfway to London and felt that I could draw breath. The Derbyshire folk showed gratifying surprise when they heard that I had walked from Edinburgh. Just one woman looked at me in consternation and cried, "Whatever did ye do that for, dear? Did you miss t' bus?" (Page 176.)

It is around Derbyshire that folk begin to call one "dear," and they go on doing it all through the kindly counties of Stafford, Warwick, and Gloucester.

Usually I was asked what kind of shoes I wore and if I had kept to the same ones. I had, but the Pennines had ground down my heels, and at Chapel en le Frith I had the shoemaker put on new ones whilst I waited.

Old customs survive in Derbyshire, nestled in the deep heart of England. In the dining room of the comfortable King's Arms at

The Long Line of a Re-pe-making Family Has Worked Here for 300 Years

When you dining at [illegible] Hear Mr. [illegible] [illegible] Marrow [illegible] [illegible]

[illegible] leathern figures which [illegible] carried in processions [illegible] were [illegible] streets on Shrove Tuesday.

[illegible] the village, offering praise and thanksgiving to God for the inestimable boon of water.

[illegible] show remarkable [illegible] talent [illegible]

"Very early in the morning while it is yet [illegible] (writes Canon Stephen J. Calzer of Wirksworth in his history of well dressings), "the completed picture will be [illegible] the place of its creation [illegible] and fixed in position. It is a thing of beauty and a joy—though not for ever. For though prayed with water, the freshness and the glory soon fade, and within a few days the work of consummate artistry so laboriously and skillfully put together is taken down and scattered to the winds.

Buxton's medicinal waters are used in the cure of rheumatism and were known to the Romans. The thermal waters issue at a constant temperature of 82° F., and are strong in radioactivity.

I found Mary Queen of Scots—and her descendant Queen Victoria—ahead of me when I walked over the hills to Castleton and descended the famous Blue John Mine, the only place in the world where this lovely bluish purple spar, topaz blue, is found in sufficient quantity to repay the cost of working. It was probably discovered by the Romans whilst they were searching for lead.

Where One Family Has Made Rope for 300 Years

In the vast mouth of Peak Cavern, which tunnels the rock to which Peveril Castle ruins cling above the village like an eagle's eyrie, a solitary ropemaker, Mr. Hugh Marrison, may still sometimes be seen working at his ropewalk like his fathers before him.

The Marrisons have had this novel workshop rent-free from the Dukes of Devonshire for 300 years. The moist atmosphere of the cavern is suitable for their craft.

When Queen Victoria visited Peak Cavern, she had to lie on her back in a flat-bottomed boat, which the guide pushed across a subterranean waterway. I ruminated on this unusual picture of the Good Queen as I crossed the hills of this ancient royal forest to the little village of Peak Forest, which was once England's Gretna Green.

Its present vicar, whose former charge was at Dawson in Yukon Territory, let me handle the interesting wooden seat, dating from 1601, of the Peculiar Court of Peak Forest.

The vicars of Peak were its principal officials and judges, having power to grant marriage licences and to marry any persons applying "from anywhere at any time," for this church in the royal forest had its own jurisdiction. An average of 60 "foreign marriages," as they were called locally, took place every year. The seat is still used on marriage licences granted by the vicar of Peak Forest.

From here I went on to the famous Peacock Inn at Rowsley, a fine manor house built in 1652, which is now a charming hotel. Here I spent three nights, for it lies within a few miles of Chatsworth on the Derwent, the palatial residence of the Duke of Devonshire, and of still lovelier Haddon Hall on the Dove River.

The immortal love story of Dorothy Vernon and John Manners, who eloped in the days of Elizabeth whilst Dorothy's sister was holding her marriage ball, draws visitors from all corners of the globe to Haddon Hall.

The ideal baronial mansion was recently restored by Dorothy's descendants, the Dukes of Rutland, who occupied it in 1939. The door by which Dorothy slipped at midnight into the garden, and the little packbridge over the Wye where her lover, disguised as a forester, waited with the horses, is still seen.

Neither they, however, nor the yew trees in the terraced gardens of Haddon can be compared in age with the great yew of Darley Dale churchyard near Matlock. It took me 45 seconds to walk at average speed round its enormous girth. For possibly some 900 years its branches have sheltered the sons of the countryside. Now they spread their benison over tablets commemorating Battles of World War II.

On April 19 the cuckoo's note floated over the gaudy damson blossom as I approached the pleasant Staffordshire town of Uttoxeter. I had come 14 miles that morning from Ashbourne, Derbyshire, which figures as "Oakbourne" in George Eliot's *Adam Bede*.

Repairing early to its fine church on Sunday morning, I was rewarded by the unique sight of eight ringers ringing their changes in the chancel in full view of the assembling congregation. The sight was one seldom seen in England, where ringers are usually concealed in the tower.*

In the Footsteps of Boswell and Dr. Johnson

At Ashbourne I picked up Dr. Johnson and Mr. Boswell in the time-mellowed and comfortable hostelry of the Green Man and Black's Head Royal Hotel.

"A very good inn," said Boswell in 1777 ordering his post chaise there. His hostess (Mrs. Killingley), "a mighty civil gentlewoman," curtsied very low to the Scots gentleman and begged for his continued patronage, for Boswell had just been staying with Dr. Johnson as the guest of Mr. John Taylor at the Mansion, a house of importance.

The solid shades of the lexicographer, whose birthplace was Lichfield, stretches also over Uttoxeter, where his father kept a bookstall. Here in 1777 (as a memorial in the market place records) Dr. Johnson stood for a considerable period bareheaded in the rain, doing penance for refusing one day in his boyhood to keep the stall for his father.

Mary Howitt, who wrote *The Spider and*

* See "By Coach and Lanes to Wales and Ireland," by Melville Del Gromercier, National Geographic Magazine, May, 1935.

Fortune Mother Prays over a Son She Bear to Death for Spilling Ink

[illegible]

was a native of Lichfield. "The way to [illegible] poor" is now through a doctor's [illegible]

Through green byways I walked on to Lichfield, the spires of whose graceful Cathedral of red sandstone are reflected in the calm waters of the Minster Pool.* Dr. Johnson's huge statue [illegible] his birthplace in the [illegible] He is depicted in thoughtful mood, [illegible] as hard, so awkward as if nursing a [illegible] (page 187). Behind him is a more recent effigy of his biographer, an alert perky looking fellow in period costume.

Cromwell's troopers stabled for conscience' sake [illegible] and stood barefoot in [illegible] and cursed its inhabitants. A century later in the Three Crowns Inn near the same spot, Dr. Johnson praised them as "the most sober, decent people in England, the generous in proportion to their wealth, and speak the purest English."

A little way out of Lichfield I came on a deserted canal and followed its grass-grown

* [illegible] Cathedrals of England [illegible]

towpath for some distance, meeting only ducks and a brown spaniel. At Atherstone gaily painted barges were loading coal for London. They would reach it, said a stout woman in a cabin full of twinkling brass, in about four days (page 195).

I had blistered both feet rather badly in a wet walk from Leicester. The sight of this woman slipping gently toward the metropolis at some four or five miles an hour, her feet dangling comfortably from the coaming whilst she imbibed a cup of tea, was alluring; but though she waved me a greeting, she did not invite me to join her. I followed the towpath till I came to Nuneaton, where I exchanged Dr. Johnson's company for George Eliot's.

Nuneaton lies within the industrial ambit of Coventry and Birmingham. All hotels were full.

A Visit to the Mill on the Floss

"When in doubt, ask a policeman," is a sound maxim in Britain. I asked. My hobby directed me to the police station; but, on second thought, "Wait a bit," he cried. "I'll come with you myself."

A few minutes later I was introduced to a kind landlady in a back street who called me 'dear.' She knew all about George Eliot and was able to direct me next morning to the Mill on the Floss. It still retains this name, though the wheels are now silent.

American scholars have written many studies of Mary Ann Evans (George Eliot) and her work. I found the present tenant of her birthplace at South Farm, Arbury, which I reached by a field path from the mill, very enthusiastic about the American soldiers who had come her way during war years.

A large military camp still stood in the wood beside George Eliot's obelisk, on which lay a wreath of withered laurels from the birthday celebrations in November.

A mile beyond Arbury I saw the bluebells. There they were, shimmering like water in the dappled sunlight below the trees. "Oh!" I cried and knelt to smell them. When I got up, the keeper was looking at me rather dubiously, his gun across his shoulder, for the road I had come was a private one for military persons only.

It led me to the old castle of Astley, associated with the nine days' queen, Lady Jane Grey, who preferred reading Plato to fox-hunting the hunt, and whose head was cut off by order of Bloody Mary in 1554. During the war the castle suffered from military occupation and was now to let for the modest sum of £6 weekly. The gardener's wife showed me over the beautifully paneled rooms, where the soldiers had played darts in the mansion.

I by-passed Coventry after a long walk which brought me within the boundary of Lady Godiva's much-bombed city, and then carried me out of it again by a speedway where countless cars were being exercised like race horses. They all bore export labels, [illegible] have to wait for their new cars.

I rested that night in Kenilworth, in the King's Arms where Sir Walter Scott planned the first chapters of his famous romance. To make sure of my night's lodging in this congested district, I decided to stay in Kenilworth for three nights in a private home and walk to Cheltenham by instalments, returning each night by bus. In this way I strolled backward from Stratford on Avon to Kenilworth.

Because evening buses were often full, I took a morning one to Shakespeare's town, meaning to return through the old city of Warwick in the afternoon. I had reckoned, however, without my host, William Shakespeare himself, who, quill in hand, from his quiet niche facing the altar of Holy Trinity Church, dominates Stratford (pages 189, 191).

I was probably the only person in its beflagged streets that brilliant morning who had quite forgotten that St. George's Day was also Shakespeare's birthday.

On walking tours one is apt to lose count of time. Luckily my guardian angel had been more thoughtful and had landed me in Stratford on the very morning of the great day of its year!

The birthday celebrations began at three. It was unthinkable to start on my return to Kenilworth before the international procession set out, headed by the mayor, to visit the poet's birthplace in Henley Street. The house is now national property in the care of the Trustees & Guardians of Shakespeare's Birthplace.

This trust owns many other priceless relics of the poet, including the only surviving letter delivered into Shakespeare's hand. It was written by his friend Richard Quiney, from the Bell in Carter Lane, London, on October 25, 1598, and requests a loan of £30. In view of Polonius' advice to Laertes, one wonders if the poet complied!

All the World Honors Shakespeare

The sun blazed, the white clouds followed, the trumpeters trumpeted, and out flew a bumper flight of all lands, from Argentina to Soviet Russia, from America to China, in glorious community. Shakespeare had succeeded where the League of Nations had faltered!

In the mayor's procession I saw two Indian ladies in blue and gold saris, a small Chinese in white trousers carrying a very large wreath, the American and Soviet representatives, and many other overseas visitors.

When I found my way to the quiet church on the Avon to bid Shakespeare farewell, two American soldiers stood there silently looking on the poet's grave within the altar rails. Its sole decoration was a sprig of gray rosemary tied with a ribbon. "There's rosemary, that's for remembrance." Through the stained glass the sunlight fell gently on it in three great purple splashes.

The Vale of Evesham is a market garden. In spring, when the orchards are dripping white plum and apple blossom, it is one of the beauty spots of Europe (page 190).

Beyond Evesham the Cotswolds rise out of the haze, and a couple of miles to the southeast Penelope Washington, daughter of Col. Henry Washington, has been asleep since 1697 under the "stars" and "bands" of the famous family's coat of arms in the beautiful old church of Wickhamford. Penelope, who never married, had the good sense to spend her days in this charming Cotswold village.

I entered Cheltenham wedged rather tightly between two Forest of Dean gentlemen who had driven a "prefab" to its destination and were returning for another. After I accepted the lift they offered, they deposited me on the outskirts of the elegant spa which became fashionable after George II drank its waters in 1788. I walked to the town center through magnificent public gardens and found a rookery in the chestnut trees which line the firm as Promenade.

The town is an educational center for both sexes. Its great Cheltenham Ladies' College, founded in 1854, one of the largest girls' boarding schools in Britain, had 700 boarders and some 60 day pupils at the time of my visit.

When I returned to Cheltenham later, I visited the college by courtesy of its principal, Miss Margaret Evelyn Popham, a lady who has traveled much in the United States. She commended the NATIONAL GEOGRAPHIC MAGAZINE as of unrivaled geographical value for her pupils. We found them, a gay and colorful assembly in their soft-green school frocks, in the lovely quadrangle amid the flowers, enjoying their "elevenses" (morning tea).

On my walk from Cheltenham to Cirencester I passed the Seven Springs, which Cheltenham folk hold to be the source of the Thames. The springs rise in a pond by a road which borders Seven Springs preparatory school for girls recently founded by two mistresses from Cheltenham Ladies' College. A week later, seven of its pupils delighted in representing the genii of the springs for the NATIONAL GEOGRAPHIC (page 170).

The Cirencester folk claim that the source of the Thames is nearer their town.

It was a delightful walk to the old town through the Cotswolds, past the golden-walled farms with their stone tiles draped in brown velvet moss, wisteria festooning the older walls. A helper was at work amid the bluebells, layering the hedge in the expert fashion of the West Country by cutting half through the stems. His craft is now a rare one, and his services are much in demand.

Real Birthplace of the Thames?

Scarcely had I passed him when a car stopped beside me and a commanding voice said, "Jump in!" A policeman sat in the back seat. What could I do but obey?

Seven miles later I was set down under the aged church tower of Cirencester, a town which the Romans called Corinium and Shakespeare Cicester, but which the natives pronounce as it is spelt.

Next morning I set out to discover Thames Head. A few miles out on the Tetbury road, a countrywoman told me to follow up the field till I had passed two copses and then look for a tree marked "TH." Apparently there used to be a tablet on this tree, but someone—perhaps from Cheltenham!—has removed it.

"[illegible] as it used to be up there," [illegible] "I don've been cutting down the [illegible]."

Surprisingly, in this age of vandalism they had spared "TH," an ash tree under which I found a small depression filled with stones.

Poor Father Thames! He was as dry as a bone. I preferred Seven Springs, for at least there was water in them. But a man burning brush near by told me the channel was full in winter and that in summer the water ran underground, coming up a few fields off, where there was a pump and a windmill.

"If you ask me," he added, "that's the right source o' t' Thames. It must be where there's water all the time." *

A week later I penetrated with Mr. Stewart and two youth hostelers to the field with the windmill and found a sizable brook there. It

* See, in the NATIONAL GEOGRAPHIC MAGAZINE, "Time and Tide on the Thames," by Frederick Simpich, February, 1939; and "Through the Heart of England in a Canadian Canoe," by R. J. Evans, May, 1922.

Beside Father Thames Stands the Mother of Parliaments

[illegible]

nibbled out of a pond covered with white water buttercups. Here at least was the [illegible] of the storied river which would [illegible] day with ocean liners. Solemnly [illegible] hands across it.

"[illegible] London" says a [illegible] near the [illegible] Fairford [illegible] for its magnificent stained glass.

[illegible] to London from Fairford [illegible] straight. I felt that matters were warming up when I saw this heartening sign.

The first lock on the Thames is near the Trout Inn by Lechlade. I remained at Lechlade for two [illegible] from there to [illegible] Wandsworth and returning to Lechlade to sleep at its comfortable Crown Hotel. There are still 88 river miles between Abingdon [illegible] and Richmond, and I had only three days in which to cover them. Could it be [illegible] without recourse to buses?

It could. Mr [illegible] showed me how. Mr [illegible] years ago from teaching [illegible] supper in the Crown & Thistle when I returned from Abingdon. He too had just

discovered Thames Head and was on his way back to London by the towpath, which he volunteered to show me. That was how, next morning, we met Captain Gibbs at Sandford Lock, three miles from Oxford.

Captain Gibbs was taking his company's pleasure steamer, the *Cleeve*, to Windsor, a two days' trip, to refit for the summer cruises which began in mid-May.

My overworked guardian angel had spotted him leaving Oxford that morning and had arranged that our arrival at Sandford Lock should coincide with his. There stood *Cleeve* in the lock, sinking slowly as the water ebbed, her deck a forest of empty and inviting seats.

"Will you take two passengers?" we cried, hardly daring to hope.

"Step in," said Captain Gibbs as the vessel rose.

"Strolling" by Boat Last Lap to London

We stepped. After all, one can still stroll to London on a pleasure craft at a leisurely four or five knots. Luxuriously we watched whilst history wafted past.

"Waft," said Mr. Lundy, "is the only word for such motion as ours."

Mansions and villages, orchards and tapering poplars were reflected in the mirrorlike stream. Sometimes a leisurely heron flapped past, or a swan sailed out from the reeds. There are 11 locks between Sandford and Reading, where we tied up for the night. I found palatial quarters in a lahoonled room overlooking the river.

Our progress to Windsor next day was equally triumphal. We were the first boat of the year, and Captain Gibbs was the most popular of captains with lock keepers and their wives. Down the long straight regatta course of Henley we sailed to Bisham Abbey, which Henry VIII gave to Anne of Cleves in compensation for divorcing her. Lucky Anne! (Page 195.)

In the Templars' church beside Bisham Lady Hoby kneels in widow's weeds on her wonderful tomb, her infant son at her feet and other members of her family at her back (page 200).

Poor Lady Hoby! Fate has blighted her copybook indelibly, for tradition has it that she chastised her young son so severely for blotting his that she caused the child's death. Whether this be true or not—and the infant on the tomb seems much too young to have died pen in hand—her ghost still walks at Bisham, preceded by a basin in which, like Lady Macbeth, she washes her hands.

Whether the basin is filled with blood, water, or ink, history does not relate. This strange story was curiously confirmed in 1840 by the discovery of some badly blotted copybooks behind the wainscot of her room!

We tied up for lunch at Marlow, whose quiet backwaters framed for Shelley's "lone boat a lone retreat" when he was writing *The Revolt of Islam*.

Beyond Marlow lovely Cliveden is screened in trees. In 1942 the estate was generously presented by Viscount Astor to the National Trust, a fitting restoration for the mansion where "Rule Britannia" was first sung.

Below Cliveden we came to Bray, also associated with song, for here lived Simon Aleyn (1588), who turned his coat thrice to keep his living. But who could blame him for resolving that "whatsoever king should reign" he would remain in this sequestered and lovely retreat? (Page 196.)

We rounded a bend and came rather suddenly in sight of the gray pile of Windsor Castle, spectacularly floodlit by a freakish sunshaft. The spire of Eton Chapel rose over the "playing field where the Battle of Waterloo was won."

The *Cleeve* went no farther than Windsor, and I said good-bye to our kind host, wishing him "Happy holidays."

"I don't think I've ever had a holiday," was the sample reply of this hard-working Thames navigator.

I slept that night under the shadow of Windsor Castle. Next morning was May Day. I had still some 20 miles to go past Magna Charta Island and through the field of Runnymede, both National Trust property and the most famous places on the Thames.

Here, in 1215, having submitted perforce to his barons encamped in their might on the greensward, King John was forced to sign on the dotted line, and the standard of freedom flew for the first time over England.

King John bitterly regretted his act. According to Holinshed, he "cursed his mother that bare him and the hour in which he was born. . . . He whetted his teeth and did bite now on one staff, now on another as he walked and oft brake the same in pieces when he had done."

My walk virtually ended upon Runnymede with King John. His vexed shadow seemed to follow me when, taking bus from Kingston Bridge, I alighted by the Houses of Parliament just on time (page 203). It was 3:30 by Big Ben on the afternoon of May Day. I had kept my date.*

* For additional articles on England and Scotland, see "National Geographic Magazine Cumulative Index, 1888–1948."

Switzerland Guards the Roof of Europe

By William H. Nicholas

H. S. Ison photos for National Geographic Magazine from Wolcott R. Carson

ONE sunny Sunday afternoon in April, [illegible] circular ring on the castle hill above the town of Sarnen. They wore their somber Sunday suits and black hats.

From the window of an old clubhouse behind them I looked out over their heads to the raised platform we all were facing. There alongside a medieval church, sat the elders of the community. A few were in traditional flowing robes denoting cantonal office.

Obwalden, one of the two half-Cantons of Unterwalden, was holding its annual *Landsgemeinde* (Country Council), reminiscent of the forums of ancient Greece or Rome or the town meetings of New England. Here were revealed the roots of Swiss democracy.

Any male of the Canton over 20 years of age might have his say on public issues, and could vote for his cantonal officers and the men sent to Bern, the Swiss capital, to represent him in the Federal Government. Beyond the roped-off ring stood women and children, voteless spectators at the annual event.

"Showing of Hands" Decides Issues

An issue was debated in Swiss-German. The presiding officer put the question. Most of the men raised their hands to vote "aye." The measure was passed.

In the year the Magna Carta was signed in England,* the three original Swiss Cantons, of which Obwalden was a part, were voting by this "showing of hands." When feudal lords ruled most of Europe; later, when Napoleon was building his Empire, and still later, when Hitler was forcing totalitarian rule on all Germany, the basis of Swiss government continued to be the "showing of hands."

Today in most of the 22 Cantons free elections with secret ballot, right of petition, initiative, and referendum take the place of the cantonal council. But in Glarus, Unterwalden, and Appenzel, the councils are held each spring on traditional spots where they have taken place for many centuries.†

This Swiss tenacity to welcome modern ways but still cling to tried traditions results in many contradictions.

One day in Geneva (Genève) I was sitting at a table of a sidewalk cafe when the noontime whistles blew. From stores and offices people poured forth. They converged upon an open space where a hundred or more bicycles were parked. In a few moments they had joined a growing stream of pedal-pushing traffic.

On bridges across the Rhône, flowing from Lake of Geneva (Lac Léman) through the heart of the city, traffic soon became so congested that motorists were slowed down to a crawl. Geneva, *en masse*, was going home to dinner and would not return until 2 p. m.

Dinner in the Evening? Never!

A few days later I asked an industrialist about the survival of this custom among an alert, hard-working people.

"Many manufacturers would like to see the practice abandoned," he told me. "People could come to work later and go home earlier if they would adopt a brief lunch period. They might be more efficient."

"However," he added, "there isn't the slightest chance of a change. The Swiss prefer to take two hours for dinner at midday, and that's that."

There are many other contradictions.

Switzerland is far from the sea. There are jocular remarks about the Swiss navy and nonexistent Swiss admirals.

Yet this inland, mountainous country is famous for its manufacture of huge Diesel marine motors. The Dutch ocean liner *Oranje* is powered by three Diesel engines of 12,500 horsepower each, built in the industrial city of Winterthur.

The watch industry employs 50,000 persons. But in 1949 Swiss machinery exports were of greater value than exports of watches. Swiss heavy machinery goes all over the world.

Sulzer-built Diesel engines provide the power for a big Shanghai power plant. Many Swiss Diesel locomotives and railway cars operate in South America.

Switzerland imports virtually all of its raw materials and huge quantities of food. Every year it buys more than it sells abroad. It receives not a cent in Marshall Plan aid. Yet Swiss currency is the strongest in Europe. By nurturing its important tourist trade and by making wise investments abroad, Switzerland keeps its books balanced.

* See "The Brush Way," by Sir Evelyn Wrench, NATIONAL GEOGRAPHIC MAGAZINE, April, 1949.

† See "Swiss Cherish Their Ancient Liberties," in Illustrations, NATIONAL GEOGRAPHIC MAGAZINE, April, 1941.

Carved in a Glacier, 65 Feet Down. The Sign on Rim Never Melts

[illegible]

[illegible] Switzerland's population has [illegible] To support 4,300,000 people, [illegible] change. [illegible] it has turned into a [illegible] in little more than 100 years. Nearly half its [illegible] and employment in [illegible] fewer than 2 [illegible] cent on farms.

Five Countries Hem In Switzerland

Switzerland, [illegible] by Germany, [illegible] Austria, Italy and France [illegible] Mediterranean [illegible] Lake Maggiore. [illegible] the Alpine [illegible] along the [illegible]

Middle range [illegible] Maggiore [illegible] the Mont Blanc [illegible] the Alps.

[illegible] Alps flow into the Atlantic [illegible] the Rhine into the [illegible]

[illegible] Mont [illegible] the Rhone [illegible] the Ticino, through [illegible]

[illegible] Mountains, much lower than the Alps, [illegible]

Between the Alps and the Jura extend the [illegible] from Lake [illegible] of Constance [illegible]

[illegible] Lausanne, [illegible] Basel, Zurich and [illegible] farmland.

[illegible] two-thirds [illegible] Jura, about one-eighth [illegible] the nation is the [illegible] lands [illegible] have paid it com[illegible] covering their attention [illegible] Alpine chain and the [illegible] of the [illegible]

Of [illegible] people in Switzerland, 72 [illegible] French, six [illegible] but name this [illegible] French and German or [illegible] Italian and German

Hikers Above the Clouds Don Sunglasses on the Crest of Great Aletsch Glacier

Heatless Stove and Tankless Plant Grace Crystal Palace

[illegible] with the coming of spring, for here the temperature never goes above freezing.

A large [illegible] Bern, the nation's capital, also is the key to the famous Bernese Alps, including the celebrated Jungfrau, 13,668 feet above sea level (page 230).

More than 750 years ago Berchtold V, Duke of Zähringen, founded the [illegible] a powerful stronghold against his enemies.

Bern's Symbol Is a Bear

Bern is derived from the German word for bear. According to legend, a bear was killed on the spot when the city was founded; hence the figure of a bear appears on the town flag and in scores of decorative motifs. Famous [illegible] popular are the historic bear pits, as I discovered on a Saturday morning stroll.

As I approached, it seemed to me that all the children of this city of 130,000 had come there. I could hear peal upon peal of childish laughter.

[illegible] bears of Bern trace their history back through the centuries. About the only thing a Bernese has to say about Napoleon's invasion of Switzerland is that he took the bear population of Bern to Paris with him.

Bern unhesitatingly retains its medieval character. Graceful arcades flank the streets of the business district, [illegible] shoppers on [illegible] (page 240).

Cool water streams from centuries-old monumental fountains in the center of busy [illegible] is crowned with the figure of a bagpiper, another a ropemaker, a third an archer, a fourth blindfolded Justice. Of course, carved bears [illegible] Most famous of Bern's fountain statues [illegible] of an ogre devouring a small child.

[illegible] clock tower, to see all the figures [illegible] placated up strata spring [illegible] striking of the hour.

Florentine-style Federal buildings [illegible] Switzerland [illegible] of the United States [illegible] Bern is also the capital of its Canton [illegible] to a state in the United States.

[illegible] are filled with all [illegible] liquor, much of it imported. [illegible] American cigarettes [illegible] available in [illegible] pack [illegible]

made of Swiss material [illegible] ture

One of the most popular makes of automobiles is the little German [illegible], originally built in the Nazis and now in [illegible] produced in Germany. Popularity of small cars is not surprising, with gasoline at 50 cents a gallon.*

In Bern keeping streets and sidewalks spotless is a matter of civic pride. Late [illegible] have difficulty [illegible] time their last [illegible] when housewives begin their rug beating.

Bern goes to work early. Government offices open at 7:45 a. m. [illegible] 7 [illegible] ing time is 5:45 p. m. In spring and autumn school opens at 7 a. m.

Recently the school authorities decided to change the starting time to a later hour but were forced to reconsider when the mothers protested.

"To get their housework done then attend to marketing and prepare that big noonday meal, it [illegible] necessary," [illegible] "[illegible] their way to school [illegible]"

"We'll Settle for a Couple of Carrots"

Bern is proud of its generations of city-owned bears, the Swiss capital's mascots for centuries. Legend tells that the day the old town was founded a bear was killed on the spot. Every fine afternoon hundreds of children and grown-ups [illegible]

On the outskirts of Bern one morning I visited a cheese processing company, where the finest of Emmentaler and Gruyère cheese is molded into [illegible] for export (page 24).

New Tricks of the Cheese-making Trade

The Swiss cheese maker, to keep in step with the times, has [illegible] variety in his [illegible] At one plant, the bulk of whose output goes [illegible] States, I saw cheese with ham [illegible] 70 percent cheese and 30 percent [illegible] the taste for a combination [illegible] in one package.

The Ovaltine plant is a few miles from Bern. [illegible] name changed to Ovaltine, [illegible] also is made in the United States. The drink originated in Switzerland. The Bern plant exports to some [illegible]

One of my early sorties from Bern was to Interlaken, in the Bernese Alps, to make the spectacular [illegible] trip by mountain railway.

The ascent by rail from Interlaken to the hamlet of Kleine Scheidegg, up the Lauterbrunnen valley, gave a foretaste of what was to come. As we climbed, twisting into and out of tunnels, a chain of snow-clad

* See "August First in Gruyères," by Melville Grosvenor, NATIONAL GEOGRAPHIC MAGAZINE, [illegible] 1938.


Four European Powers Encircle
Landlocked Switzerland
G E R M A N Y
A U S T R I A
S W I T Z E R L A N D
I T A L Y
Mulhouse
Belfort
Basel
Winterthur
Zürich
St Gallen
Besançon
La Chaux de Fonds
Le Locle
Neuchâtel
Bern
Luzern
Lausanne
Geneve
Como
Bergamo
TICINO
St Gotthard Pass

Europe's Highest Hotel, Surrounded by Snow, Peers from the Icy Face of the Sphinx

peaks gradually appeared in the background.

At Kleine Scheidegg we changed to the Jungfrau Railway and began a steeper, cog wheel climb. This line, highest in Europe, was begun in 1896 and completed in 1912 to Jungfraujoch, at a point 2,428 feet from the summit.

Twice the train paused so we could visit enclosed galleries for superb views of the valleys below and the peaks above. Then, at the end of a tremendous tunnel, we pulled into the underground station of Jungfraujoch (p. 211).

Europe's Highest Observation Terrace

Walking at this high altitude was difficult because of the rarefied air, but the view at the end of a stroll to the snow-covered plateau of Jungfraujoch repaid the effort. Then we retraced our steps to an elevator which ascended 364 feet to the summit of the Sphinx, where we emerged upon the highest observation terrace in Europe.

Around us, perfectly at home amid the snow and ice, flocks of alpine choughs wheeled and soared in the cold mountain breeze. These birds, related to the crow family, inhabit many mountains of northern Europe.

Climbers can ascend from here to the summit of the Jungfrau in from three to four hours. The ascent of one sister peak, the Monch, is harder; but most difficult of all is the near-by Eiger. Though the mountain was climbed as long ago as 1858, the sheer, almost unscalable approach up the north wall, the Eigerwand (Ogre's Wall), was not conquered until 1938 (page 230).

The Jungfrau Railway is spectacular, but so is a goodly portion of the entire Swiss Federal Railways.

Their electrification, begun in 1907, is 98 percent complete today. When World War II cut off coal supplies to Switzerland, its people were thankful that they had embarked upon this $250,000,000 project.

In thrifty Switzerland most passengers travel third class (about 94 percent in 1949); only one percent buy first-class accommodations. The Swiss love to tell about a high Government official who once was encountered by a friend in a third-class coach.

"Why, sir, how is it that you are riding third class?" the astonished friend inquired.

"Come, now," replied the official, "surely you know there is no fourth class."

In Lucerne, Switzerland's most frequented tourist resort (page 232), I promenaded with hundreds of other visitors along the quays looking out over the sparkling waters of the Lake of Lucerne (Vierwaldstatter See) to the Alps beyond.

Behind me in a solid row stood the big hotels, famous for their views of the lake and the mountains—the Rigi to the east, Pilatus to the south, and the long ranges in the Cantons of Uri, Schwyz, and Unterwalden to the south and east.

I rambled through the streets until I came upon the Lion Monument. This commemorates the Swiss Guards who died defending Louis XVI and Marie Antoinette from the attacks of Revolutionary mobs on the Tuileries in Paris in 1792.

Hewn in the face of the living rock by a Constance (Konstanz) sculptor, the figure represents a lion of colossal size, mortally wounded but endeavoring to protect to the last a shield bearing the fleur-de-lis of the Bourbons. The figure is mirrored in a pool at the monument's base.

Steamboat trips on the Lake of Lucerne are legion. The boats penetrate deep into the heart of the William Tell country, where spot after spot is associated with the legendary hero of Swiss independence.

But I was most interested in the meadow of Rutli. Swiss independence was born there in 1291, and a dramatic event took place there during World War II. This spot on the Lake shore now belongs to the State and is a place of pilgrimage, particularly on Sundays.

In July, 1940, after Hitler's armies had overrun Belgium and the Netherlands, and had conquered France, the Swiss learned through their excellent Army intelligence service that their turn was about to come.

Switzerland had mobilized all its manpower to maintain its neutrality. It was prepared to resist any invader at all costs.

But the shattering impact of the Blitzkrieg on stronger nations had had a pronounced effect on Swiss morale. In some quarters, both civilian and military, defeatism set in.

General Guisan Restores Morale

Then Gen. Henri Guisan, commander in chief of the Swiss forces, on the eve of the threatened attack, on July 25, 1940, summoned every high-ranking officer of the Swiss Army to the Rutli.

"I have decided to assemble you in this historical spot, the cradle of our independence, to talk with you as soldier to soldier," the General told them.

He outlined the military situation, warned his officers against listening to the ill-informed or ill-intentioned, and concluded firmly:

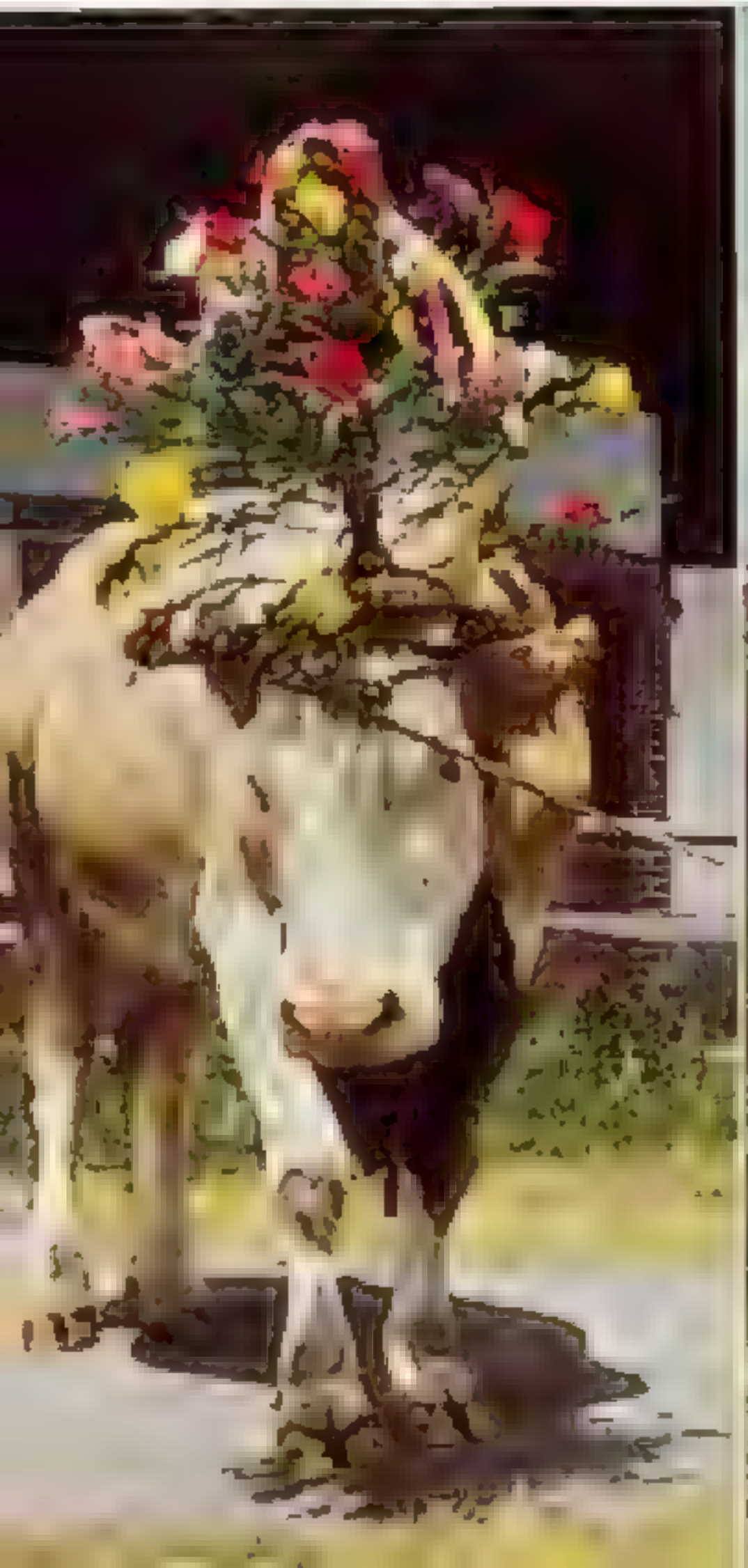
"On August 29, 1939, the Federal Council ordered mobilization of frontier troops, then total mobilization. It entrusted the Army with safeguarding our secular independence.

Men of Appenzell Choose Folk Costume but Know the Feel of Army Uniforms, Too

Alpine Pass Castle St. Moritz World-famous Winter Sports Centre, By Its Lake in the Heart of the Upper Engadine Valley

Early in June Flower-garlanded Valaisans and Their Cows Parade to the Mountains for the Summer

[illegible]



At Snow's Pass, Mighty Glacier Glaciers Creeps down Its Valley

Do, Mi, Sol, Do! Resonant Notes Blown by an Appenzell Herdsman on a Huge Alpine Horn Boom and Echo in the Swiss Mountains

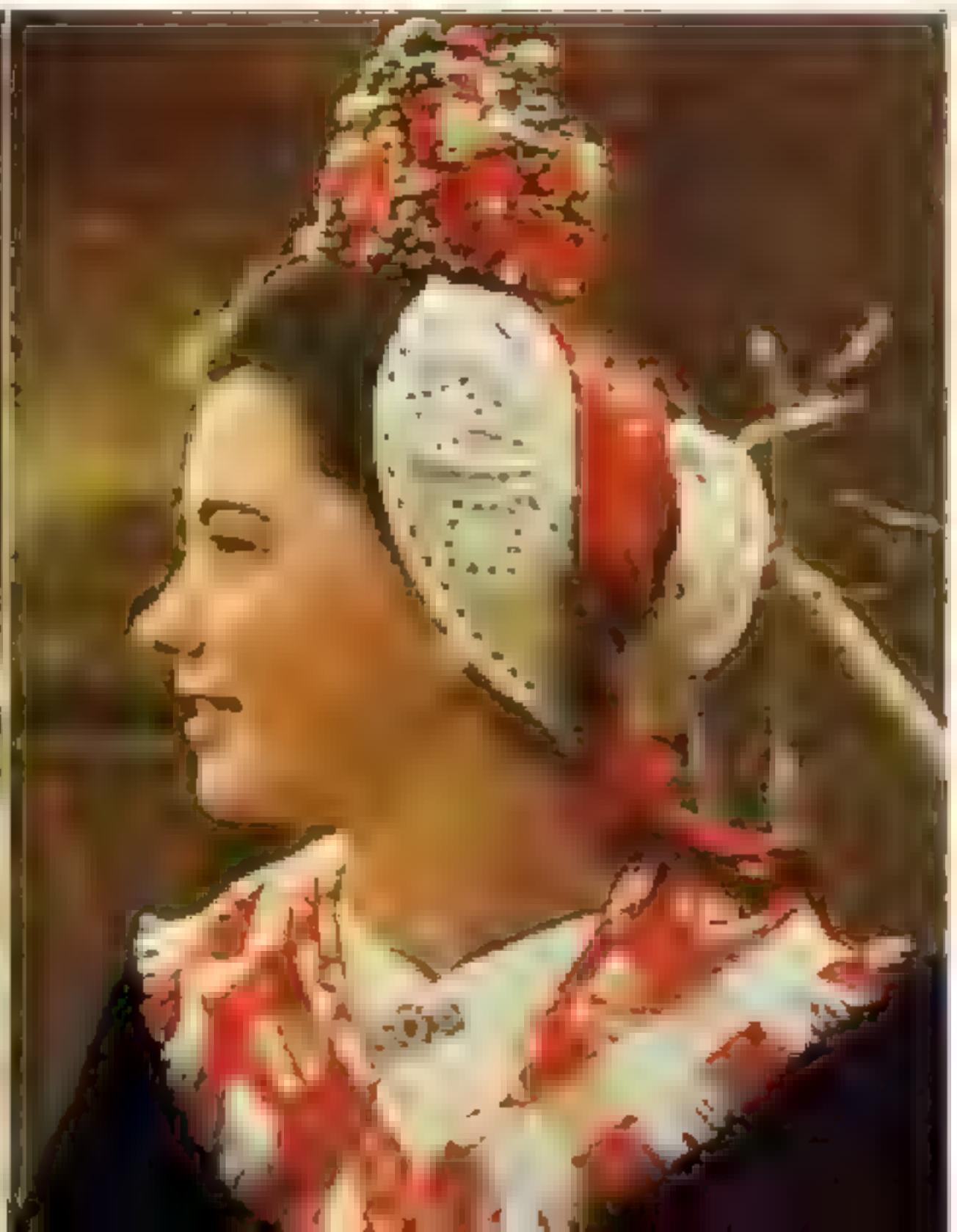
[illegible]

Lucy Wells at Sprue Cascade Facing 1,000-Year Old Cedar Lumberhouse

Swiss Lacking Coal Stuck Their Wood with Glue Against Long, Cold Winters Decorate a New House with a Festooned Tree

* Butterfly Headdress Tests the Skill of Appenzell Needleworkers

* Sugarloaf Bonnet for a Zermatt Maid, Glass Balls Crown an Engadine Bride



On a Hill Close to Lake of Geneva Gay Narcissus Promises an End to Cold Weather

Summer Villas in Tiny Ronco Flank the Shore of Europe's Deepest Lake, Maggiore, Shared by Switzerland and Italy

[illegible]

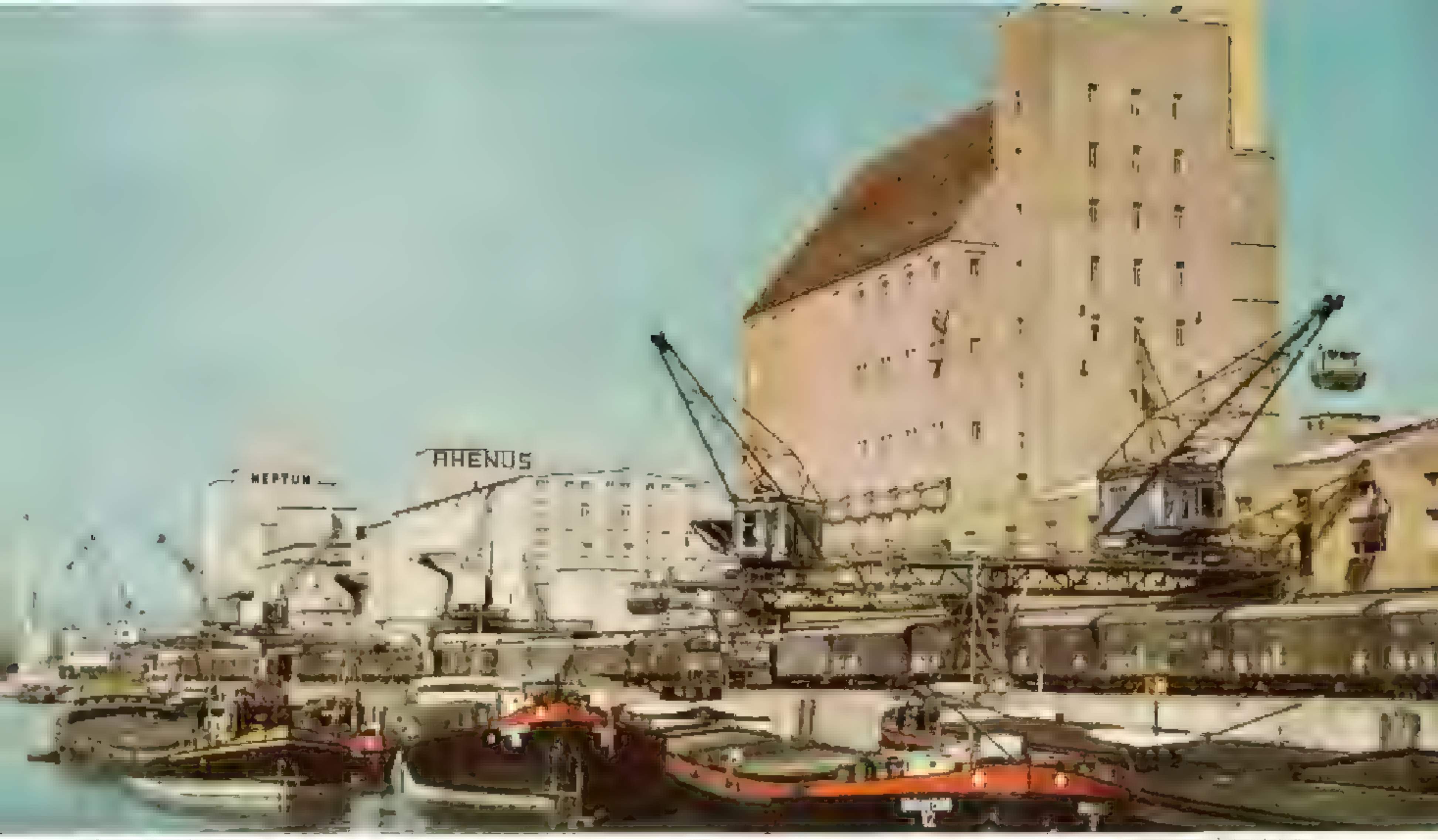
Sturdy Girls Cart Empty Wicker Baskets out to Hay Fields; Sturdy Geese Plods Home with Theirs Heavily Laden

Melting Snow Wells into a Natural Reflecting Pool for the Moon Mutterhorn

[illegible]

Mounted on White, the Matterhorn Soars 14,780 Feet Above Sea Level

[illegible]



To Basel, Switzerland's "Seaport," River Boats Pull up the Rhine from Rotterdam Bringing Two Million Tons of Imports a Year

[illegible]

Wayfarers Dine in the Terrace of an Old Castle to the Music of the Majestic Falls of the Rhine

Even the Dog Helps Do the Chores on a Small but Busy Hungry Farm

Women of Zuze Whip a Sheet to and fro at Dizzy Speed in the Town "Laundry"

This independence our neighbors have respected until today. We shall see that they respect it to the end."

He sent them back to their posts in fighting mood; they communicated that spirit to their troops, and Swiss morale was restored.

Hitler did not attack. Since the war, officials told me, documents have been found which showed that Hitler was advised that it would cost 500,000 German casualties to subdue the Swiss. He was unwilling to pay that price.

New and Old Blend in Fribourg

The old town of Fribourg, on the linguistic dividing line between French-speaking and German-speaking Switzerland, stands on a rocky peninsula, edged on three sides by a bend in the River Sarine, 180 feet below. Tree-clad hill country encircles the town beyond the river. Entrances are by high bridges across the Sarine. Parts of the ancient wall and some of the watchtowers still stand.

Dominating the town is the Gothic St. Nicholas Cathedral, begun in the 14th century. Its organ is famous throughout Europe.

As we strolled through the vast interior, awed by the loveliness of the old stained-glass windows, the hand-carved choir stalls, and the massive altar, we suddenly heard the great organ. Unaware of his small audience, the organist high above us was practicing. We stayed to enjoy an impromptu recital.

The new home of the University, completed in 1946, is [illegible] students from [illegible] University [illegible]

Six other [illegible] Basel, Berne, Zurich, Geneva, Vaud and Neuchâtel [illegible] universities. The Federal Institute of Technology at Zürich has produced engineers who have made international reputations. Othmar H. Ammann, engineer and builder of the huge George Washington Bridge across the Hudson River, is a Swiss.

I went to Basel to visit the Swiss Industries Fair, which attracts buyers from all parts of the world. The town was in holiday mood.

I was astonished at the number and variety of displays. One hundred and twenty-six watch manufacturers had booths at the "watch fair" in which were displayed models at prices ranging from a few dollars to $5,000.

The Rhine splits the city of Basel so that the smaller portion to the north is in an enclave, cut off from the rest of Switzerland by water.

At the point where the borders of France, Germany, and Switzerland meet, I looked across the water to the north to see a German customhouse, and across the water to the southwest to see part of the fortifications of the ill-fated Maginot Line.

Warehouses and elevators line the basin from which the Rhine river boats depart for Antwerp (page 226).*

In Baden, Aargau Canton, I visited the [illegible] Brown, Boveri & Company, Ltd., builders of electrical and mechanical equipment.

Founded in 1891, this institution was the first in Europe to make steam turbines for land and marine use. In 1906 it electrified the Simplon Tunnel.

In the big plant, which employs 8,000 people, I saw huge insulators being tested in an artificial rainstorm, and men and women hard at work atop, inside, and under big transformers, turbines and generators (page 244). An impulse generator in the high-voltage laboratory produces a maximum of 2,400,000 volts.

One of every four engineers in the company's employ is engaged in research.

Another Swiss industrial giant is Sulzer Brothers, Ltd., in the manufacturing city of Winterthur. As a family enterprise this firm goes back to 1775, when Salomon Sulzer opened a small brass foundry inside the town.

The first Sulzer Diesel engine was built in 1897, tiny in comparison with the Diesels in the *Oranje* (page 205). Today Sulzer Diesels are in service all over the world.

Sulzer locomotives operate on the Romanian state railways; an Australian mining company is Sulzer-equipped; an Algiers hospital has installed a Sulzer warming and air-conditioning unit; an irrigation project in Egypt is equipped with four big Sulzer screw pumps.

Steelmakers of Schaffhausen

In Schaffhausen, on the Rhine, is a third big plant, the George Fischer, Ltd., steel and iron works. Here, as far back as 1802, Johann Conrad Fischer began experiments in the manufacture of crucible cast steel, the invention of an English watchmaker which had been a guarded secret for 60 years. Within two years Fischer had produced the first crucible cast steel on the Continent.

Now Fischer's can turn out a variety of some 7,000 items, from a huge 30-ton steel casting, through forgings and machine tools, down to a tiny key (page 234).

I observed that many workmen seemed to be Italians.

"They are Italians," my escort said. "About

* See "Rediscovering the Rhine," by Melville Chater, NATIONAL GEOGRAPHIC MAGAZINE, July, 1955.

Monarchs of the Alps: Lizard, Mouse, Jumping Mouse, Spotted and Many Generations of Visitors

Descended by Giant Cliffs, on Narrow Trail Climbs Up Subterranean Gorge Above the Devil's Bridge

[illegible]

Off Lucerne's Lido Beach, Three Girls Give a Boy a Rough Time

100,000 Italians are working in Swiss factories today, and we are glad to have them.

"When a man who is out of a job has the enterprise to leave his own country and go elsewhere to make a living for his family back home, he usually can be counted on to be a good workman.

"Here at Fischer's we have built comfortable dormitories for them. Most of their earnings go back home for their families."

The town of Schaffhausen lies in an enclave, part of a 15-mile strip of territory lying north of the Rhine but belonging to Switzerland.

During World War II the people lived in constant fear of invasion by the Nazis. Tragically, though, their only physical suffering came at the hands of American airmen who mistook the town for a German target and unleashed a violent aerial attack upon it about noon on April 1, 1944.

In the Mayor's office I saw a huge map on which each bit had been recorded. Singularly, not a bomb fell in the valley where the big Rheinfelder plant stands.

Since the war, Congress has passed a reparations bill adjusting Swiss war claims, and more than half of the funds appropriated has gone to Schaffhausen.

Over the Rhine bridge which connects Schaffhausen with the rest of Switzerland, I drove a mile or so with friends to a pleasant restaurant which commands a view of the falls of the Rhine. As we sampled Rhine trout, my companions told me to observe the hilly, tree-covered backdrop for the celebrated falls (page 223).

"A man wanted to build a factory on that hill," they told me. "But the town wouldn't let him. It would have spoiled the view."

Zürich, Switzerland's Metropolis

On my first trip to serious, hard-working Zurich, I found it in holiday mood, for I arrived on the day of the *Sechseläuten*, or "Six o'Clock Ringing," the last Monday in April.

That is when the entire Canton says farewell to Old Man Winter and turns him in effigy as the climax to a day of rejoicing.

I lunched in the huge railway station restaurant, which employs some 400 persons to cater to thousands of guests daily. Favors that day were little snowmen on sticks, replicas of the figure about to be burned.

In Sechseläuten Park across town, near the Lake of Zurich (Zürich See), Old Man Winter, looking like the snowmen fashioned by American boys, swayed in the breeze atop a high pole, awaiting his doom. Below him tapers were piled some 25 feet in the air, ready for the torch.

Soon the head of the parade came into view. The marchers, afoot and on horseback, were members of Zurich's historic guilds, clad in colorful traditional costumes.

The bakers were in the van. One group was baking bread in an oven on a float. Others tossed bits of bread to the spectators.

Then came the smiths (originally armorers, sword makers, pewterers, and bell founders); the guilds of near-by districts in garb of country folk of the 18th century, accompanied by their geese, chickens, pigs, cows, and horses; men in resplendent costumes of the Guild of Constaffel, founded by knights, noblemen, and scientists; guilds of fishermen, huntsmen, carpenters, boatsmen, tanners and shoemakers, weavers, and others.

Although interest among the onlookers was keen, I noticed an absence of cheering.

But suddenly far down the street I heard a rising crescendo of applause. Everyone around me burst into wild cheering. Then I noticed in the line of march a small gentleman of about 70, dressed in conservative civilian attire, who modestly acknowledged the plaudits of the crowd.

I turned to my Swiss companion. But I had to wait for my answer, for he, too, was on his feet cheering wildly.

"Why that is General Guisan," my friend finally said breathlessly. "He's the greatest man in Switzerland. He was our General during the war" (page 212).

Dusk fell and the parade marched on. At 6 o'clock the torch was put to the fagots. Soon a huge blaze roared skyward. Old Man Winter began to burn.

The crowd roared. Horsemen raced wildly and recklessly around the huge blaze. Firecrackers concealed within Old Man Winter's costume started to bang. Shouts grew louder. And all the time the innumerable bands, by this time spaced at intervals around the park, took turns playing the rollicking *Sechseläuten March*, especially composed many years ago for this ceremony.

Darkness fell and the crowds dispersed.

Chilly wind blew through the streets. Paraders and spectators shivered. But everyone was happy. Winter officially, was at an end. Soon those delightful days of sailing on the Lake of Zurich and climbing in the mountains were to come again.

The next day the serious business of living was resumed. For Zürich is one of Europe's big banking, insurance, commercial and industrial centers. Primarily it is a place of work, not of play.

For centuries Swiss textile workers have been selling their cloth in all parts of the world.

Water Will Spin This 24-[illegible] Steel Wheel Like a Top

[illegible]

little "hand-embroidery" [illegible] of which the women of the [illegible] have worked.

Modern textile factories have largely taken their places (pages 288 and 289). Today but a tenth of these machines are in operation, and they are employed [illegible] machine [illegible]

Only a few people, [illegible] the [illegible] St. Gallen [illegible] but people [illegible] come [illegible]

From St. Gallen I went on to the [illegible] Canton of Glarus, [illegible] whose [illegible] New Glarus, Wisconsin.

[illegible] Glarus [illegible] through the Linth [illegible] memorable experience. [illegible] lying in the basin [illegible] The Linth River is almost completely [illegible] the [illegible]

One important center of the industry is St. Gallen [illegible] the [illegible]

The Abbey of St. Gallen, [illegible] medieval music and [illegible] of the [illegible] in the early [illegible] centers north of the Alps. Most of the town's [illegible] particularly the old [illegible] houses with [illegible] windows [illegible]

St. Gallen and the neighboring Cantons of Appenzell and Thurgau long were famous for their [illegible] embroidery and lace. [illegible]

In places the valley [illegible] less than a mile wide. [illegible] on either side seemed [illegible]

Near the entrance to the valley lies the Lake Walen [illegible] Linth was [illegible] than a century ago. A canal, whose flow is controlled, was put from the Walen See [illegible] outlet. Standing at the end of the canal I could see it stretch like a narrow ribbon down to the Lake of Zurich, 11 miles distant.

[illegible] National Geographic Magazine, June [illegible]

At a small inn beside the Walen See we stopped for an aperitif. Across the lake we could glimpse an international express train, Austria bound, as it flashed into view through a series of galleries cut into the rocky mountainside.

I noticed that the Hoeslis spoke English at first with a little difficulty, but as the day progressed they became more fluent.

"Our English is rusty," Herr Hoesli apologized. "Some years ago it was much better.

"When I first met my wife she was working in a wholesale house in Zürich. I went there often to buy merchandise. She spoke French. I spoke Swiss-German. But we both spoke English; so we used that tongue during our courtship. Both of us had traveled in the United States.

"After we were married, I learned to speak French and she learned to speak Swiss-German. Soon we abandoned English entirely. Now that you are here, we are glad to have the opportunity to brush up."

Glarus, capital of the Canton, is an oddity in Switzerland. It has no old buildings as the term 'old' is understood in Europe. A disastrous fire destroyed the town almost a century ago. Some of the money to rebuild came from New Glarus, Wisconsin.

For centuries Glarus has been a textile-manufacture center. In the museum at Näfels I saw old wooden cylinders with hand-carved patterns that looked singularly Indian.

"We once made printed cloth for Indian sarongs and exported it to India," said my Swiss companion. "Also, we once had a virtual monopoly on felt for Turkish fezzes. The Turks bought material from us. The secret of our process was that we mixed a certain amount of cow dung with the dye."

Switzerland's largest Canton, Graubünden, or the Grisons, is one of the most sparsely settled. The whole Canton is a network of mountain valleys, some as high as 6,000 feet above sea level. Its streams drain to the Danube, Rhine, and Po.

I entered the Grisons by way of the upper Rhine Valley, traveling by train to Chur, chief town of the Canton. This ancient community of narrow streets and tall houses was the seat of a Bishop as early as 452. The Cathedral, on a hill overlooking the town, is more than 650 years old.

The rail journey from Chur to St. Moritz is spectacular. Ruined castles perched on high mountainsides come into view every few miles. Huge boulders litter hillsides and project from the beds of rushing streams. The rocky, forbidding land is in striking contrast to the lush meadows of Glarus.

Loops, spiral tunnels, deep cuts, and high bridges followed one upon the other until the train emerged from the Albula Tunnel, nearly four miles long, to enter upon the floor of the Upper Engadine Valley. A few moments later we had reached the town of St. Moritz, 6,000 feet above sea level (page 214).

The famed winter resort lies high above its lovely lake and is bordered by still higher mountains, their summits capped with snow. These mountains, a skiers' paradise in winter, shed their white mantles late in spring. Then nimble Brown Swiss cattle climb high up the sloping sides to graze throughout the summer months (page 215).

In 1884 St. Moritz built its first toboggan run, the Cresta. A few years later the oldest bobsled club in the world was formed there and the old sport of curling was introduced. Then figure skating and ice hockey brought more color and glamour to St. Moritz, along with its celebrated ski jumps and ski runs.

A Tongue from Roman Times

Only 40,000 Swiss, about a third of the population, of the Grisons, speak Rhaeto-Romansch, but in 1938 the nation voted to preserve it as a fourth national language. The Grisons were part of the ancient Roman province of Rhaetia, and their language stems from Roman times.

Despite infiltration of German settlers into the Grisons, the ancient tongue held its own in the Engadine, the Vorder Rhein, and Hinter Rhein Valleys.

In Samaden the old and powerful Planta family presented its ancestral home as a research institute for the study and promotion of Rhaeto-Romansch culture. Here Dr. John Pult, head of the institute, shows the Rhaeto-Romansch library of more than 4,000 volumes, some printed as early as 1552. I saw the first complete edition of the Bible in Sursilvian, a Romansch division, printed at Chur in 1718. It contained a four-page dedication to George I of England.

"He contributed 50 guineas toward the printing costs," Dr. Pult explained.

On the library shelves were the works of Walt Whitman and Henry Wadsworth Longfellow [illegible] of English writers—Shakespeare, Byron, Tennyson, and Dickens.

In the village of Zuoz (page 228) stand typical Engadine houses, stone structures with thick walls, from four to five centuries old. The general plan for each was the same—a court in the center, entered through stout doors wide and high enough to admit a loaded hay wagon; the kitchen and dining room on

one side of the court; sleeping quarters on the other; and in the rear a huge barn, with stables underneath.

The practical reason for this layout is to keep human beings and animals warm during the long and bitterly cold winters.

Most of the old Engadine houses were built by Italian stonemasons and carpenters, who came over the mountains from Italy to do the work in the summer months, sometimes working three or four summers on one home.

They built well, but were disturbed to discover that the stone of the Engadine was too soft to permit decorative carving.

So they applied a double coating of finish to the exterior stone, drew their designs upon it, and then scratched through the lighter, outer coat. Thus the dark-colored inner coating was revealed, making the design.

This art work they called *sgraffiti*, from the Italian word *sgraffare*, to scratch. Fronts of some Engadine houses are thus decorated.

Through Italy to Lugano

Going from St. Moritz to the southern lake resort of Lugano, I crossed the tip of north-central Italy. The Ticino, Switzerland's Italian-speaking Canton, thrusting southward to the Lake of Lugano, is bordered both on the east and the west by Italian soil.

By Swiss Federal Postal Service motorbus I headed southward through the Upper Engadine. For some 10 miles out of St. Moritz the road scarcely changed its level. The Italian-speaking Swiss village of Maloja is at virtually the same altitude as St. Moritz.

Then suddenly the bus began a spectacular descent into the Val Bregaglia, 2,000 feet below, on a steep road cut into the cliff. I was amazed at the dexterity with which the driver negotiated the 12 terrifying hairpin turns in the road.

Just beyond tiny Castasegna the bus crossed the border and wound its way through small, tumble-down Italian towns.

For 15 miles from the head of Italy's celebrated Lake of Como we skirted the western side of the beautiful lake, with its picturesque fishing villages and palatial summer villas. At Menaggio we swung westward and in a few miles were able to see the eastern tip of the Lake of Lugano. We followed the shore of the lake into the famous resort.

In a few hours I had moved from alpine to tropical surroundings. The evening before, I had asked my hotel proprietor at St. Moritz to place a small electric heater in my room for warmth. Now, 24 hours later, I was eating dinner on the balcony outside my room, which overlooked the lovely lake.

Along the lake's edge a promenade extended for several miles, bordered with formal rows of plane trees. The lake itself was dotted with pleasure craft—sailboats, motorboats, and lake steamers homeward bound with sight-seeing parties. Two miles south of Lugano, tree-clad San Salvatore, a sugar-loaf mountain, cast its bold shadow over the lake.

In Lugano the ancient and lovely old church of Santa Maria degli Angeli, overlooking the lake, stands alongside the fashionable hotels, shops, and numerous ticket-agency offices. Across the promenade scores of motorboats ranged in line for hire.

To reach the Canton of Valais, I again passed across Italian territory, this time by rail, and through the famed Simplon Tunnel, longest in the world. It extends for more than 12 miles, and where it pierces the main ridge of the Alps 7,000 feet of mountain lie overhead. The Swiss-Italian border is at a point about halfway through the tunnel. Just beyond the northern end the train came to a halt in the little town of Brig.

Brig is an important crossroads. It lies at the foot of the Simplon Pass, which leads over the Alps into Italy, and also is on the main road to the Furka Pass, which, with the near-by Grimsel and St. Gotthard Passes, affords communication across the mountains to central Switzerland.

Roads wind over more than 25 major passes and numerous minor ones across the Swiss Alps. One historic pass is the Great St. Bernard, which crosses into Italy from the southwestern part of the Canton of Vaud. Celts and Romans made their way over its trail before the time of Christ. By this route Napoleon led his army into Italy, to defeat the Austrians at the famous Battle of Marengo.

At the mountain hospice founded by St. Bernard of Menthon in the 11th century are bred the famous Saint Bernard dogs, which were trained to rescue snowbound travelers.

At Visp, a few miles from Brig, I boarded the narrow-gauge railroad for Zermatt and the Matterhorn. This steep line, which ascends the Nikolai Valley, climbs through rugged mountain country for 22 miles, gaining 3,150 feet in altitude in that length, aided by rack-and-pinion gear.

The mile-high, mostly single-street village of Zermatt, health resort and tourist and winter sport center, stands on a little plain completely surrounded by Switzerland's most impressive mountain giants—the Dom, the Matterhorn, and the Monte Rosa, Zmuttgrat, and Weisshorn groups.

The summit of the Monte Rosa group is the highest in Switzerland, 15,216 feet; our

Grapes at the Foot of the Rainbow Are Pots of Gold for Growers of Lavaux Near Vevey

[illegible]

Organdies and Voiles from Ancient St. Gallen Become the Latest Paris and New York Fashions

• Faster than Eye Can Follow, a Modern Dobby Loom Weaves Colored Textures

[illegible]

• With a Sure Touch, She Gives Prints a Scarf by Applying a Hard Block

[illegible]

Apostles, Bears, Cocks All Spring into Action When Bern's Old Clock Strikes the Hour

[illegible]

Huge Geraniums Backed Farmhouse Arched at Gable End, Marks Owner as a Week-Ender Rather Than a Farmer. Girls Wear Traditional Costumes

Flats Increasingly Rented to Elderly Women and Children on a Child's Mr. Marvin Nedd

[illegible]

The Comfort Winter's Cold This Travels Last Sats on Its Big Jear Stong

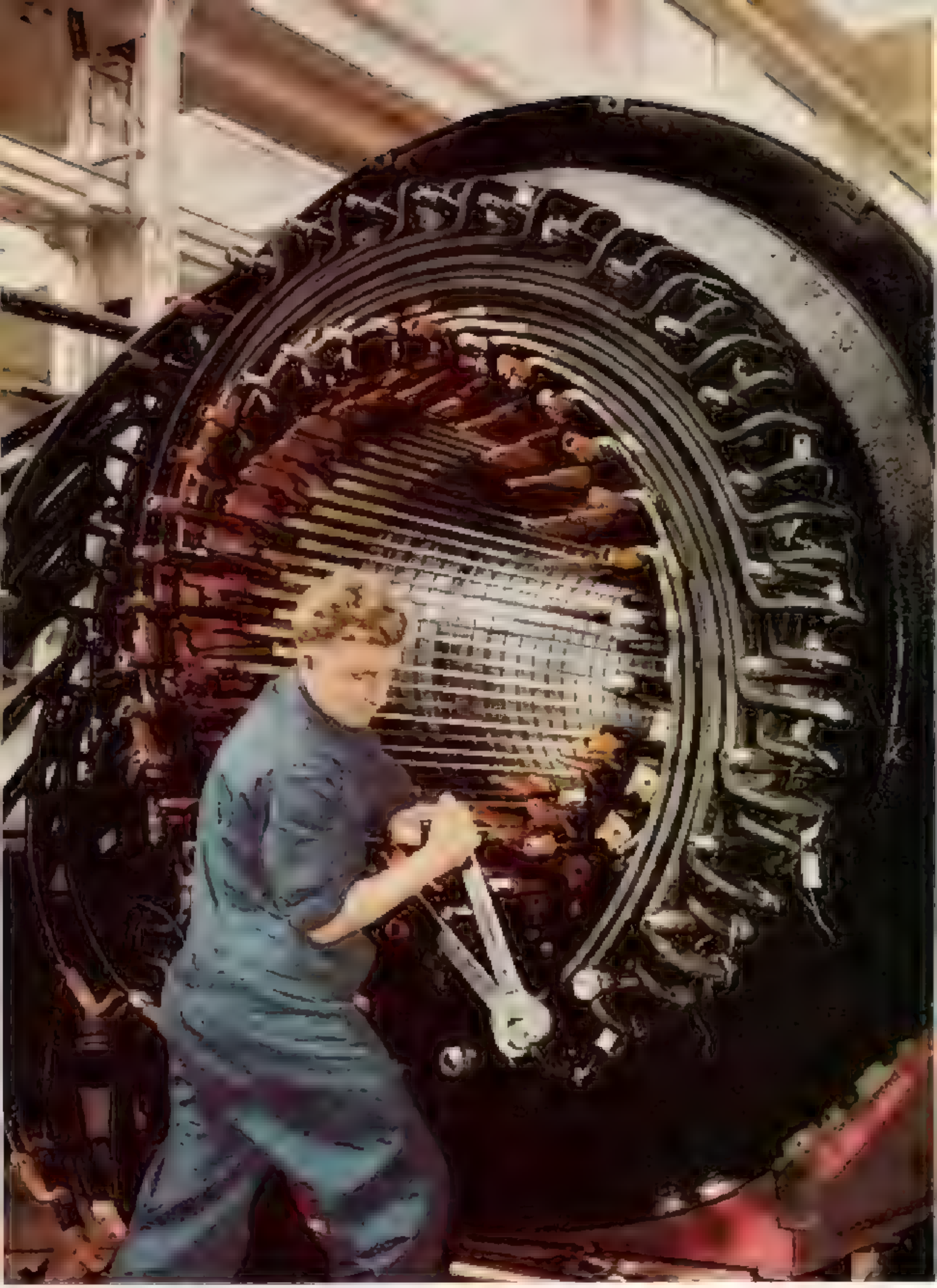
[illegible]

A Village Cheese Maker Works in the Mountains Near the Coast in Sicamar

[illegible]

His Cheese Wheels, Molded Down, Are Molded in Tiny Paper Frames

[illegible]



This Giant Alternator Will Produce Enough Electric Power for a Town of 25,000

[illegible] Hydro-electric plant at Boulder Dam [illegible] 115,000 KW [illegible] Government [illegible] Southwest [illegible] proposed. The [illegible] power [illegible] more [illegible]

it is not so impressive as the Matterhorn, 436 feet lower, which stands alone in lofty splendor (pages 224 and 225).*

So visitors may view the Matterhorn at close range, the Swiss have built the highest open-air railway in Europe. The line ascends from Zermatt to its terminus at Gornergrat, 10,289 feet above sea level, to afford a breathtaking panorama of some 50 snow-capped peaks and more than 50 glaciers.

My journey next led through the upper Rhône Valley, the wine- and fruit-producing region of the Valais. The train flashed by vineyard after vineyard whose grapes produce chiefly the excellent white wine known as Fendant du Valais.

The name comes from the French verb *fendre*, to split. When grapes of this variety are ripe, if they are pressed between thumb and forefinger they will split lengthwise without spurting juice from their pulp.

Heading westward, my train now was approaching [illegible] and is important industry of entertaining visitors. Soon I was in Montreux, a name generally applied to an area embracing half a dozen resort villages, all fronting on the Lake of Geneva at its eastern end. In normal times fashionable Montreux attracts some 80,000 visitors annually.

No excursion from Montreux is more popular than that to the Castle of Chillon, made famous by Byron's poem, *The Prisoner of Chillon*. Not far south of the hamlet of Veytaux the medieval castle stands on an islet in the lake, connected with the shore by a wooden bridge.

Between Montreux and Lausanne the lake shore is dotted with villas and hamlets. Among them is the resort town of Vevey, [illegible] "white, clean, English, and comfortable" today as when Victor Hugo so described it (page 237). Vevey is a production center for famed Nestlé Swiss chocolate.

I had not been in Lausanne many moments when I realized that this Swiss city boasted few bicycles. It is built on steep hills. On the highest stands the imposing Cathedral of Notre Dame, consecrated with great pomp in 1275 in the presence of the Emperor Rudolph of Hapsburg.

Here, too, is the professional school of the Swiss Hotelkeepers Association. The Swiss have long enjoyed the reputation of being Europe's finest innkeepers. The aim of the school, founded in 1893, is to foster that reputation.

Closed down during World War II, the school has reopened, refurnished with the most up-to-date hotel equipment available. Its modern buildings front on Lake of Geneva. Escorted by the director of the school, I walked through the gleaming kitchens where earnest lads, each wearing a chef's tall white cap, were learning the art of cooking under the eyes of experienced instructors.

"We have students from 23 different nations," the director told me. "Some come from Australia, others from South Africa. That big fellow there is from Ireland. Many are from England and Canada. We have had students from the United States, attending under the provisions of your GI bill of rights.

"Here they all learn the hotel business from the ground up. About a third are in the cooking class, another third in the service, or waiters' class, and the rest in the secretarial class. Girls learn how to become managers' assistants, take care of stockrooms, and supervise chambermaids."

After a student graduates, he takes another five-month course of practical training in a Swiss hotel.

Watches, Watches Everywhere

One day I departed from Lausanne to visit the French-speaking hamlet of L'Orient in the Jura Mountains, a typical watchmaking community made up almost entirely of the Lemania Watch Company, its 250 employees and their families.

All the parts for Lemania watches are made here except the springs and jewels. Jewels for modern watch bearings, incidentally, are synthetic rubies, considered better for the purpose than genuine rubies.

I was amazed at the requirements for accuracy, at the numerous inspections of the various tiny parts, and at the patience of the workers who handled them. Fine jewelers' lathes, punches, drills, and other special automatic machinery were in evidence everywhere; but no matter how precise the machines were, each individual piece turned out was carefully filed and polished by hand, and inspected, in the constant drive for perfection.

I had my lunch that day at the nearby hamlet of Pompaples at the pleasant Café du Milieu du Monde (Center of the World).

The ambitious title arises from the fact that from a pond less than 200 yards away two tiny streams emerge, one flowing into the Rhine, the other into the Rhône.

Later in the day I visited the Laboratory of Horological Research at Neuchâtel, where every device known to science is employed

* See "Mankind Against Climbing" by Miriam Lichtheim, National Geographic Magazine, August 1944.

This Oldsmobile Patch, Philippe Watchmaker Serves Assembly Lines

[illegible]

to keep Swiss watchmakers in the forefront [illegible]

[illegible] the making of precision [illegible]

[illegible]

[illegible] constant.

As I walked through the [illegible]

A stroll through Geneva [illegible] evidence of the wide scope of Swiss [illegible]

Geneva Modern and Thriving

Geneva is thoroughly modern. Bern may [illegible] of the lake and the banks of the Rhône.

The International Red Cross, founded in Switzerland [illegible]

[illegible] Nations [illegible] of Geneva [illegible] the United Nations.

[illegible]

[illegible] lake. The sun [illegible] rose the [illegible] Mont Blanc [illegible] and 7 [illegible] For man's efforts seemed puny [illegible]

[illegible]

Porcupines, Rambling Pincushions

By Donald A. Spencer

I HAD lived and camped in the mountains [illegible] Western [illegible] when I was first startled from a sound sleep by a weird and unfamiliar cry. It set my scalp to prickling. Cautiously, I felt under my bed for flashlight and pistol.

I couldn't imagine what creature had found its way into that deserted mountain shack. The sound was like someone singing the scale using the word, "Unh." The ghostly vocalist's wail ascended note by note until quite shrill, then dropped and dribbled away in an evenly spaced "Unh, unh, unh."

Several minutes I listened while this call was repeated again and again. Then I set about to locate its source.

Imagine my chagrin when I located a pint-sized baby porcupine under the cabin floor! I had believed the porcupine to be practically voiceless. Since that night I've learned a great deal about the fascinating pincushion-on-legs, yet I'm always making new discoveries about these lovable (yes!) wood and wanderers.

Pest or Pet, Porky Has Personality

The porcupine is an entertaining member of our wildlife family. It runs the gamut from an economic pest to a position of sociability among some Indian tribes of the Southwest. In days gone by its quills were widely used for ornamentation of garments, weapons, and implements (pages 249, 258, and 259). The long guard hairs were fashioned into cockscomb headdresses.

In Henry Wadsworth Longfellow's *Song of Hiawatha*, the hero appealed to Kagh, the hedgehog, for quills to decorate a new birch-bark canoe. "Take my quills, O Hiawatha!" generously responded the porcupine.

> From the ground the quills he gathered
> All the little sharp porcupines,
> Stained them red and blue and yellow,
> With the juice of roots and berries.
> Into his canoe he wrought them
> Round its waist a shining girdle,
> Round its bows a gleaming necklace . . .

Fact and fantasy weave queer patterns about the porcupine. Many an amusing tale springs from encounters with this prickly quarry. Its eating habits cause serious forest damage; the injury it brings to crops and domestic animals merits serious concern.

How many of us credit the porcupine with writing its own history, planning meals a year in advance, with coming when called out of its wild retreat, or with being an affectionate pet?

Perhaps you are one of the thousands of Americans who take tent or bedroll and strike out for woods and mountains in vacation time. The first time you've been awakened by a rustling in the grub box or among the pans, and your flashlight picks out a porcupine, you may be excused for cringing.

In a tent the porcupine may look as large [illegible] it that, instead of running when spotlighted, the intruder whirls about, reaches up a 4-inch-deep thatch of sharp quills, and makes a few warning "whacks" with its clublike tail, also thick with quills.

The experienced camper keeps his light on the intruder, makes a noise, and may indulge in profane allusions to the ancestry of all porcupines. Porky will hesitate briefly, then leave the tent at a clumsy run. It's as easy as that!

Porky's armor of some 30,000 multibarbed quills is formidable enough. Besides, the strong incisor teeth can sever a finger in one bite (page 253). However, there is little danger from a porcupine except through ignorance or sheer accident. I recall one night years ago on a highway in the western [illegible]

Three of us were intent on capturing a big porcupine alive, aided only by the car lights turned into the willow scrub. The quarry took refuge in a willow clump. One of us went around to the opposite side to drive it out.

Porky came out unexpectedly, right at our feet. Startled, my brother stepped backward. He bumped into me, and we both lost our balance. My brother fell across the porcupine that hadn't got clear.

The chase ended then and there. The porcupine went its indifferent way unharmed. We spent the next hour in front of the car headlights jerking out, one by one, the maze of quills that nailed the trousers to the victim's thigh. A painful operation.

A Walking Arsenal of 30,000 Spears

Along the back and sides, from eyebrow to tip of tail, the porcupine is armed with needle-sharp quills (page 260). Only the face, legs, belly, and undersurface of the tail are free of them. If there are 30,000 quills on one porcupine, that is a lot of protection, especially when you consider that they are replaced when lost in combat or dulled through normal wear.

One cold winter night in Wisconsin I de-

Ending a Hunger Strike, Greta Sinks Her Teeth in a Slice of Bread

[illegible]

[illegible] rarely, the [illegible] [illegible]. [illegible] a [illegible], [illegible] with the [illegible] [illegible] [illegible] [illegible] [illegible] which [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] quills [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] these [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible]. These [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] prevent the quill from being readily extracted.

Quills once embedded in the flesh [illegible] work steadily deeper, their movement aided by the victim's muscle action. I have [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] my [illegible] "[illegible] out" [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. In the excitement of [illegible] and the activity of field work, it is common for single quills to become embedded and work into the flesh without being noticed.

The quills are not poisonous and rarely carry infection themselves, but [illegible] [illegible] [illegible] could penetrate [illegible] [illegible] [illegible] [illegible] enough to [illegible]

[illegible] Photographer [illegible]

Porcupine Quillwork Decorates the Sleeve of Crazy Bull's Rich Trappings

Recently this Sioux chief visited Explorers Hall in the National Geographic Society's headquarters in Washington, D. C., to see the exhibit of more than 100 paintings by W. Langdon Kihn which have illustrated articles on Native North American Indians in the NATIONAL GEOGRAPHIC MAGAZINE. Here he admires the portrait of his kinsman, Chief Crazy Bull, one of the Indians who overwhelmed Gen. George A. Custer at the Little Bighorn in Montana in 1876. Crazy Bull wears a breastplate of bone beads and a necklace of bear claws and [illegible]

[illegible] quills [illegible] The proud owner can do no more than break off the protruding [illegible] The truncated points work deeper into the mouth and throat until, unable to [illegible] the victim dies of starvation.

Domestic animals frequently run afoul of porcupines. The hunting dog often finds [illegible] "prickly [illegible]" Horses, [illegible] and even horses pay dearly for the curiosity that makes them puzzle that strange brown form wandering in the pasture (page 250).

[illegible] "Then will let out the air so the quill collapses and is easily withdrawn." Others recommend swabbing the quilled area with vinegar, sweet oil, or other lotion to soften the barbs before pulling. Still others counsel twirling the quill to "twist" the barbs out.

[illegible] nor will any solvent soften embedded barbs

[illegible] January [illegible]

"This Is for Your Own Good, Pal! It Won't Hurt (Much)"

[illegible] porcupine [illegible]

Who, then, would deliberately become intimate with live porcupines? An inquiring biologist, perhaps, and many others interested in our native wildlife.

Want to Capture a Porky Barehanded?

[illegible] the capture of a porcupine [illegible] from its perch high in a [illegible] tree (page 254). As I climb, [illegible] the porcupine, either to the highest [illegible]. Often as not this is beyond the point [illegible] a man dares trust his weight.

[illegible] time porky stopped where it [illegible]. First I had to brace myself on the [illegible] perch and [illegible] with hands [illegible]. The porcupine was [illegible] arm's length, [illegible]. At my slightest movement the [illegible]. [illegible] notion that a porcupine can throw its quills, the tail can drive them [illegible].

The [illegible] is to make a [illegible] for the [illegible] bristles that [illegible] the tip of the tail, which [illegible] between thumb and forefinger of the left hand, lift the tail and in a continuing movement slide the right hand beneath the [illegible] grasp it firmly near the base (no quills [illegible] remember).

I had but [illegible] second for this action, but once I had a firm grip on the tail I stopped to catch my breath. Unlike other animals that turn and attempt to bite, the porcupine seeks only to pull away. Now porky could be dragged off the limb [illegible] in midair. It was so heavy-bodied that an occasional jiggle kept it [illegible] its teeth into play [illegible].

Then follows the feat of climbing down the tree with only one free hand, the other [illegible] in holding a [illegible] pounds of determination. I have done this hundreds of times, [illegible] with near-[illegible]. Here was the episode near Brattleboro, Vermont.

A co-worker and I discovered a porcupine near the top of a 40-foot spruce. I went up after it. Since four feet of snow blanketed the ground, I planned to push the animal out of the tree for my partner below to retrieve unharmed. I carried a wand cut from a near-by

bush, for the tree was dying back at the top and I cared not go high enough to grab the porcupine by hand.

The trick was to reach up and over the porcupine with the wand and rap it on the nose, being careful not to touch the animal's back in so doing. After several such raps porky began to back down toward me.

I hurriedly dropped the wand and slid my hands and feet out along lateral branches, so that the descending animal passed between me and the trunk of the tree within inches of my face. Remaining motionless until it reached the level of my feet, I put my foot on its head and shoved.

Alas! While dislodging the porcupine, I had paid too little attention to the size of the [illegible] snapped, throwing my entire weight on the right branch. This also gave way and sent me out of the tree backward.

Porky a Night Wanderer

Four feet of snow make a good cushion if one insists on falling out of trees. Luckily, I didn't land on the porcupine, which my partner caught the easy way by upending a metal pan over it and sliding the lid underneath.

The porcupine is more commonly abroad at night. During the day it hides in the crevice of a rocky ledge (page 264), in the labyrinth of a loose rock talus, or in a hollow log.

There are no comforts of home in this den—no nest, no bed of leaves, no stored food. In fact, porky may be sitting unconcernedly on a cake of ice, for the den serves only for protection against predators (including man) and the weather.

Porky doesn't hibernate in winter, but is abroad whenever the weather is suitable. At times it will spend one or several days in a tree without leaving.

Its habits are somewhat different in the Rocky Mountains and southwestern States, where the yellow-haired porcupine uses a "rest tree" instead of a den in which to pass the daylight hours. Scattered throughout the forest are trees with high, broad, lateral limbs where the animal sprawls asleep, often with all four feet dangling overside.

All these habits pertain to the winter months, when the porcupine is feeding in the trees. During the rest of the year it feeds on ground vegetation and sleeps during the day in some thicket or ground retreat.

No longer dependent on the den area and its forest cover, it is more evenly distributed over the range and is found in open parks, along streams and lakes, in agricultural regions, and on the prairie miles from timber.

In spring each year the single young is born, [illegible] fully formed. Of course the quills are soft and in proportion to the baby's size, but within half an hour they are ready to protect their bearer, as I have learned through taking a score of these one-pound infants by Caesarean operation.

What always interests me is the fact that, without an adult to imitate, one of the newborn porcupine's first actions, 15 minutes from time of birth, is to whirl with tail toward any unusual movement or noise and strike from side to side.

In other ways this youngster is an able little fellow. It follows its mother about on the ground within a few hours. The nursing period is usually short, for within about three weeks it is feeding on succulent green vegetation. Family ties are usually terminated in a couple of months.

Paradoxically, the porcupine makes one of the most interesting and lovable of pets.

"Who'd want a pincushion for a pet? And how do you pet them?" you may ask. It's easy when you start with very young individuals, although my wife may disagree with that statement. She has had much of the early feeding and care of some 11 different "quill pigs" (page 257).

We start them on diluted cow's milk, administering it first from a rubber ear syringe, later from a larger tube, finally graduating to bread and milk in a saucer. Very quickly they are eating many things—fruits of all kinds, certain vegetables, dandelion and other greens, and all kinds of cereals and breads (page 248).

It's comical to watch a young porcupine holding half a slice of orange in its front paws and trying to bend its head so as not to lose the drops of juice that tend to drip off.

"Rarin' to Go" at Humans' Bedtime

Hilarious times are in store, especially if two or three of these little fellows are raised together. They're as playful as puppies and fully as noisy.

[illegible] is the youngsters' period [illegible] They first want to be fed, then, if free to do so, will follow one about the house like shadows, keeping up a low-pitched plaintive cry.

When you pause, they swarm about your feet attempting to climb a trouser leg or reaching for the hem of a skirt (the "new look" kind, of course). They even like to be picked up and handled. This should be done by sliding the hand under the animal, never picking it up by the tail as you would a wild rabbit.

The quills normally are held flat to the body, except when the animal is angered or frightened. Only if you attempt to pet "against the grain" will you be pricked.

Porcupines soon learn to reach up and grasp the lowered hand with their forepaws and permit themselves to be swung up into your arms. The girls will have to wear slacks, for not only are porky's long claws rough on silk stockings but they inflict unintentional scratches.

After the meal they probably will go into a characteristic dance or game. They make short running dashes about the room and end up by spinning about several times, much as if shadowboxing with their tails. This performance will be varied by rushing up to each other and whirling.

Sulker Gets Picked On

If one of the group doesn't care to play and objects with an annoyed cry, then, like human children, he gets picked on the rest of the evening. They also like to wrestle, placing their forearms about each other and rocking back and forth in neck battle until they tumble over and separate.

When tired of play, do they go off to the box prepared for their sleeping quarters?

They do not! They come waddling over to where you sit in your chair reading, crawl up your sloping pants' leg and nose about in your lap. If you absent-mindedly rub their noses or scratch their tummies, they finally snuggle down to sleep. Put them down, and back they come.

For animals so solitary in habit, they exhibit an unusual desire for man's company that first year of their lives. Nor do they lose the play instinct after the first couple of months. Our [illegible] liked nothing better than a romp on the lawn. This finally left being turned over backward and roughed upside down like any puppy.

You must understand that it is porky who initiates this play; you don't. That's one characteristic wherein a porcupine pet differs from others. When it has finished playing, any insistence on your part results in taised quills—about as emphatic a "No" as you will ever experience!

An Albino Is Born

I made my first successful Caesarean operation to acquire a baby porcupine more than 20 years ago, in Arizona. Although I've made many since, in all parts of the United States, the outstanding one took place near Carthage, New York, in the spring of 1941.

I wanted Kodachrome photographs of making Caesarean operations, so I shot a female and busied myself for 20 minutes taking preliminary pictures. When I finally opened the uterus, there was an albino embryo (page 236)!

I worked feverishly to save the little fellow, for records tell of very few albinos found in this country. One outstanding albino was photographed in its natural habitat on the Upper Peninsula of Michigan by George Shiras, 3d, for six consecutive years, from 1901 to 1906.*

Pinkie, the albino I took near Carthage, is alive today. The pink eyes and feet, white hair and quills, make him truly outstanding among porcupines. He even became a movie star in a Government film entitled, *The Canadian Porcupine*. Twice he has traveled across the United States and back for public appearances.

After Pinkie was a year old, and only because my duties as biologist for the U. S. Fish and Wildlife Service forced me to be forever on the move, I gave him and several other normal-colored porcupines to my friend, Dr. Albert R. Shadle, of the University of Buffalo.

Dr. Shadle maintains a sizable colony of porcupines, and Pinkie has since featured in many scientific experiments and resulting publications. He now weighs about 25 pounds, which is large for the species.

Young Porcupines Are Vociferous

I've learned that young porcupines are far from silent. Those pets of ours repeated that scale-running cry many a night during the first months of their lives. The adults are quieter, and it is unlikely you will hear them except during the breeding season in the fall.

At that time porky's peculiar call may drift downwind to your campfire from some distant tree. You may also hear two porcupines in the same tree at that season quarreling sturdily. But at almost any time of year you may hear a low-pitched "Unh, unh, unh" given in monotone.

It was mid-November and the first snow lay on the ground. With a young forester, Harland Barnmeister, I was cruising a timber stand on the Nicolet National Forest in northern Wisconsin. We located a porcupine almost obscured in thick foliage high up a large hemlock. My companion had been born and raised in these woods and to him a porcupine was nothing new, but still . . .

Instructing Harland to stand perfectly still,

* See "Photographs of an Albino Porcupine and [illegible] Cover," by George Shiras, 3d, NATIONAL GEOGRAPHIC MAGAZINE, June, [illegible]

Buckteeth Bared for Action: but Porky Is Set to Feed Not Fight

[illegible]

Down Drops Rocks in a Wire Cage — Author Lowers Away from 50 Feet Up

"Grab a Pesky Hardwood?" Absurd! Yet Alice Spencer Does It Often

[illegible]

Turning Its Back to the Tree Proved This Primrose's Undoing

[illegible]

"Grace", a Sleeve, Fur Album: Porcupine, Grew from a Tiny Snowball. Below:

Young "Mac" and "Sticks" Raise a Ruckus If They're Not Fed at the Same Time

[illegible]

Oldtime Indian Shirt and Robe Glow with Dyed Quills

[illegible]

Quill Flowers and Eared Owl Adorn Ottawa Indian Knickknack Boxes

[illegible]

Here's One Way It's Safe to Step on Porcupine Quills!

[illegible]

"One Foot Closer and You'd Get an Armful of 'Souvenirs'" Says Cornered Perky

"This Fellow Can Drive Those Darts Clean Through Heavy Glove"

I began calling the porcupine in the language I had learned from my captive pets. The animal moved to a point where he could peer down at us, but since we made no movement he was unaware of our presence.

I repeated the call insistently. Presently the porcupine began backing down from his 40-foot-high perch. He was halfway down before we could hear his low, continuous back talk. Several times he stopped as if not quite sure my "porky talk" was all it should be.

Reaching the snow-covered ground, he waddled in our direction, talking back all the while. At last he stood up beside my leg and sniffed at my trousers, puzzled. Our first movement set him off in an awkward gallop for the nearest tree, wholly disillusioned.

Calling doesn't always produce results, but it's worth a try. Next morning, in another part of the forest, I called a large porcupine out of a hard maple. He waddled across 40 feet of snow-covered brush and fallen logs to stand at my feet. This fellow I captured alive and took to Rhinelander, Wisconsin, for exhibition.

Many a hunter has learned to imitate the call of a wild animal or bird and used the deception to locate his quarry. Were it not for the widely accepted idea that the porcupine has no voice worthy of the name, calling them would hardly be new.

Many are the times I've lain down where a snow trail enters a pile of rocks and talked [illegible] were present back beyond the reach of my vision, I could establish that fact by eliciting an answer. The response to my call was not always friendly, for often the disturbed animals "swear back" by chattering their teeth.

Eyesight None Too Good

Someone is sure to ask: "You were standing in plain sight when calling these porcupines to you. Couldn't they see that you weren't another porcupine?" No, apparently they couldn't. Like many another wild animal, they seem to discern and take alarm at a moving object readily enough, but pay little or no attention to a motionless one.

Besides, their eyesight is relatively poor. I regularly release our captives for a romp on the lawn. They follow about at an awkward gallop as long as I keep up a grunting call and don't get too far away. If I stop at a distance of as little as 30 feet and make no noise, they are unable to locate me except by chance.

They sit up, sniff the air in all directions, but even their noses don't prove much help. That seems strange, too, for they carefully and thoroughly sniff over every bit of food before venturing a bite. But many a naturalist can relate an instance when he encountered a porcupine along a forest trail and saw the prickly rodent proceed along the path right up to him, seemingly unaware of the presence of a human until he moved.

The porcupine spends almost half its life in trees, for frosts and winter snows destroy or cover up the more desirable plant food on the forest floor.

It is comical to watch a baby porcupine learn that he has to back down from high places. A little slow to learn and more than a little stubborn, he will start down a tree headfirst, only to take a tumble.

On the next try he will worry over the problem, but for a time sloping way down, but almost invariably fall again. Eventually he discovers the "back down" through trial and error. With instinctive caution, he is soon a capable climber.

Porcupines Feast on Trees' Inner Bark

Equipped with four remarkable wood chisels in stout incisor teeth that grow throughout its life, porky chips off the outer corky bark of trees and then feeds on the inner bark (page 293). Unfortunately for the tree, that inner layer is its life line, carrying starches and sugars.

The porcupine can draw on this abundant source of food no matter how deep the snows. Since he prefers to feed in comfort and safety, he barks the upper surface of branches and those places on the trunk which can be reached from some convenient perch. If the feeding completely encircles the trunk, then the tree above that point must die.

But even spot damage weakens the tree, leaving it subject to drought and storm and the inroads of fungus and disease. Since the porcupine usually eats but a small fraction of the bark of any one tree, he is wasteful indeed of this forest resource.

These general statements hardly seem to prove the case that losses inflicted on the forest by porcupines gave cause for sober thought. Few of us ever have seen more than a few porcupines and an occasional damaged tree.

But the reader may be surprised to learn that the owner of a small apple orchard in Maine trapped 65 porcupines among the trees at fruit-picking time one fall; that on a national forest in Wisconsin there is a porcupine population of better than one animal for each 10 acres of hardwood-hemlock growth; and that over an extensive area in the pinon-

jumper fell of southwestern Colorado 85 percent of the pinons more than four inches in diameter show scars from porcupine feeding.

With the melting of winter snows porky abandons bark for the more appetizing flowers, catkins, and new green leaves of such trees as willow, maple, and cottonwood. As the countryside begins to green and bloom, he may desert the forest entirely and invade gardens and orchards, grain and hayfields. He appreciates variety in his diet.

In settled parts of our country the porcupine's craving for salt gets it into trouble. Anything human hands have touched repeatedly is apt to be impregnated with a slight amount of salt from perspiration, enough to whet porky's appetite (opposite). This applies to handles of farm and lumbering tools, to farm equipment, parts on tractors, trucks, and the like.

Salty spots in the home include edges of tables, chairs, stair rails, window sills, and doorjambs. Grease and salt may have collected on floors and stairs. Urine also contains salts, so barns, stables, and outhouse roofs in for their share of his attention.

How often I have walked into an abandoned house, whether a farmhouse in Vermont's Green Mountains or an isolated miner's shack in Colorado, to find great holes eaten in the floor. Where the cellar stairs had been only the stringers and a fragment of one or two steps remain.

There's a common saying in the north woods that "there is no need to move a lumber camp, as the porkies will eat it all up." This applies equally well to ghost mining towns of the Rockies.

Insatiable Craving for Salt

But also in our modern world when the city dweller builds a summer home in the woods and hills, leaving it closed and untended during winter months, the porcupine's insatiable craving for salt results in gnawed doorjambs and window sills. On occasion he even breaks into a poorly secured cabin to wreak havoc on the furniture within.

The Forest and National Park Services get thoroughly out of patience with porky when they have to replace almost yearly, the seats of those "Chick Sales" annexes that serve our [illegible].

You don't have to own a house to come up against this salt eating habit. Were you ever on a vacation trip, to awaken one morning and find that overnight a porcupine had nearly scalloped the paddle handles and the gunwale of the canoe? Or perhaps on a pack trip you failed to hang up your saddle, and a porcupine effectively shredded the sweated girth, stirrup leathers, and seat. There is even one report in my files recounting a porcupine's fondness for synthetic automobile tires!

As you become more familiar with porcupine tree feeding, you grow aware that frequently the animal returns to feed a second time on a given tree. These feedings are a year or more apart, and *the second meal is characteristically above the first*. This practice may be repeated year after year, until the wound is so large that the tree dies.

Porky Makes Trees Store Food

One maple with an 8-inch trunk bore marks showing that the original feeding scar had been enlarged upward on each of 11 successive years. The explanation? Tree roots pick up moisture and dissolved minerals from the soil and send them up through the inner core of the tree. The leaves, with the aid of sunlight, manufacture starch and sugar that return to the roots and trunk through the inner bark (the soft cambium layer).

Removal of the inner bark by porcupine feeding creates a dam, impeding the flow of nourishment. Thus an excess of food accumulates *above* the wound the following season.

How do we know that the porcupine selects the inner bark because of its sugar content?

Well, a number of years ago, Dr. Henry I. Baldwin was conducting experiments in artificial thinning of northern hardwoods in Maine. Selected trees were ring girdled with an ax and left standing, to die within one to five years.

During the winter one year later Dr. Baldwin noted that porcupines feeding in this particular block of trees confined themselves very largely to the girdled trees, leaving the unmarked trees alone. The feeding was always *above* the ax ring cut. A chemical analysis of the inner bark above the ax girdle was compared with an analysis of the inner bark below, and of that of unmarked trees. From 20 to 300 times more sugar was found above the ring than below, and double or treble the amount found in the unmarked trees.

Whether this food storage is deliberately planned or not, the porcupine instinctively understands his tree physiology.

Porcupines long dead have left a recorded history almost as complete as that of the Cliff Dwellers of the Southwest. I hesitate to explain the nature of these ancient "writings" and to use among mammalian archeology, for it tells the story of some of its strange and unbelievable character.

But true it is, and this is the way of it. In

Caught in the Act of Eating a Stone Wall. Porky Bristles in Rage

[illegible]

[illegible] and [illegible] Dr. [illegible] Superintendent of the Lake [illegible] in the Rocky Mountain University of Wyoming.

[illegible]

We have adapted this technique to the study [illegible]

From the [illegible] in a given [illegible] the porcupine population [illegible]

[illegible] areas, and even which trees [illegible] part of the diet.

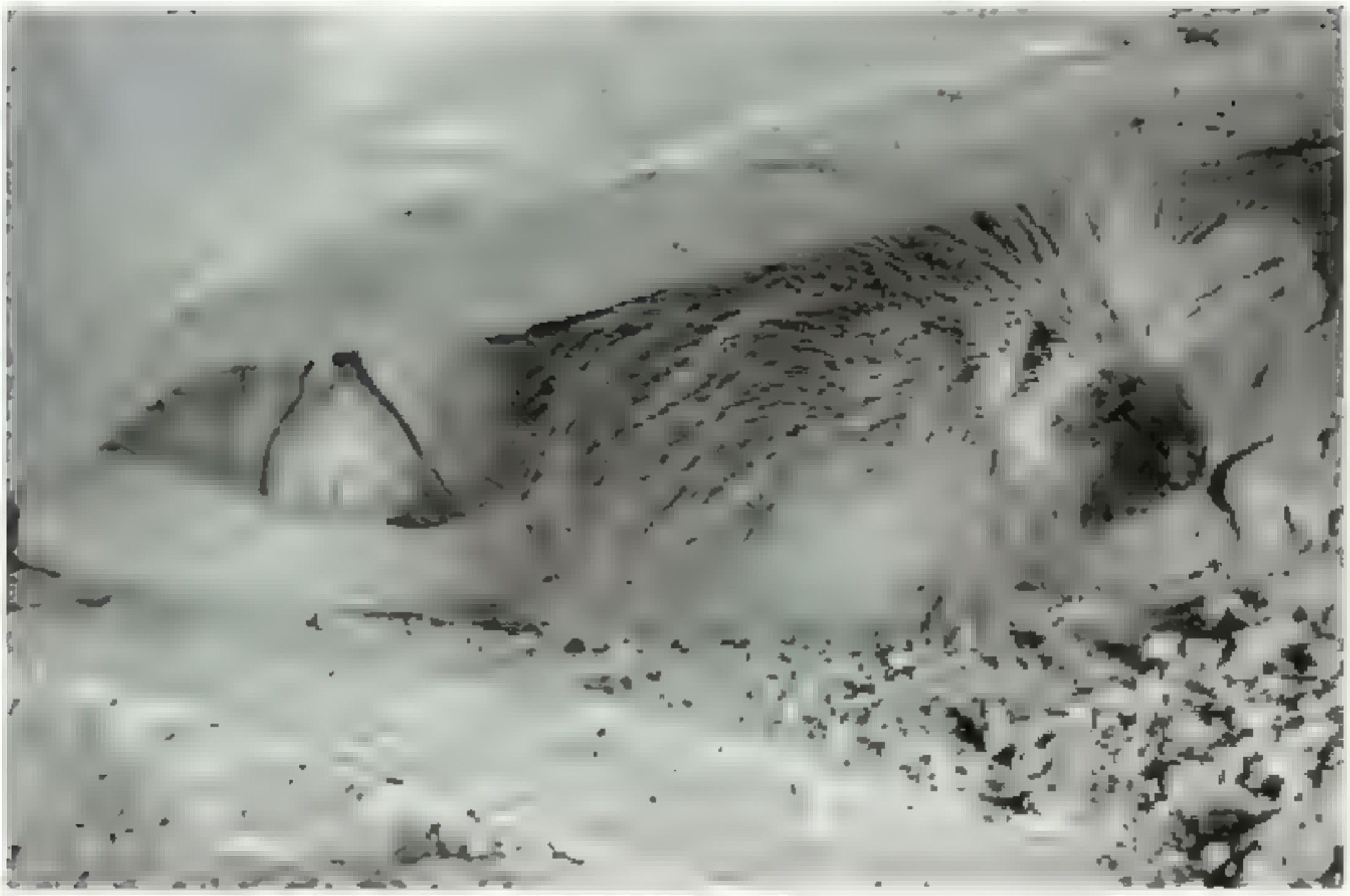
These [illegible] Dr. [illegible] Lake [illegible] Mesa Verde National Park [illegible] their [illegible] distribution.

A Welcome Emergency Ration

[illegible] that may be [illegible] and leaf without [illegible] the porcupine [illegible] still pick up [illegible] life of a lost [illegible] person.

[illegible] the porcupine [illegible] Some [illegible] the [illegible]

[illegible]



Caught by the Tail, Rebellious Porky Is Pulled from His Rocky Den

Captured porcupines [illegible] to photographer [illegible] the author [illegible] after [illegible] rope in a crevice south of Denver, Colorado. Porcupines [illegible] at night. During the day they [illegible] under piles of [illegible]. They make no bed of [illegible] nor do they store food. They seek only protection from enemies and the weather.

[illegible] able to find and eat a porcupine? Many hunters are lost each big-game season in the [illegible] that these deaths are due largely to [illegible] exposure, not to starvation.

In northern Canada and Alaska conditions are entirely different. There the hunter or trapper is usually well able to cope with the elements when lost or stranded by storm, but his survival is dependent on the availability of food.

That hunter of the far north knows the habits of porcupines and relishes the meat for food. Neither fact applies to our city deer hunter in the States.

A Poor or Tree Sitter

A porcupine's instinct to stay put is a boon to the traveler in remote areas threatened with a vanishing grub supply. A porcupine will often spend days or weeks in the same tree.

An observant fur trapper, covering lines extending 50 to 100 miles from his base camp, might return to a spot where he had seen a porcupine a week or more before with a good chance of bagging the animal.

From northern British Columbia come several stories in native jargon sent me by Hal Quirk, now serving with the Arctic Institute of North America. One trapper, when asked about porcupines replied, "Porkypine pretty important. When crust is on snow and you can't stalk anything you might be able to find a porkypine because he don't travel so fast."

Still another native pointed out that the old people like porcupine and hunt it a lot as they cannot "hunt hard or do the hard work of butchering an animal as large as a moose."

As for the method of preparation: "Build a big fire. Throw porkypine in. Burn off all the quills and hair right down to the skin, then pick it out. Gut it and cut off head and feet. Roast it on hook. Cooks fast, about half as any other animal."

In the States I have been asked for freshly killed porcupines by a French-Canadian lumberjack in northern New England, and by Navajo Indians in southwestern Colorado. In each case, they stew the meat and add vegetables. Nevertheless I doubt if it will ever gain general favor in the States as food. It is difficult to prepare for the table, and the excessive parasitism of porcupines by tapeworms and roundworms would rule against it.

St. Helena: the Forgotten Island

By Quentin Keynes

With Illustrations from Photographs by the Author

EVER SINCE I first read an exciting sentence about St. Helena which my great grandfather, Charles Darwin, had written in *The Voyage of H.M.S. "Beagle"* after a week's visit in 1836, I had dreamed of going to that remote island.

"St. Helena," he wrote, "situated so remote from any continent, in the midst of a great ocean, and possessing a unique Flora, excites our curiosity."

My boyish curiosity was whetted further by collecting stamps and by reading about the last days of Napoleon in textbooks.

After diligent study of a map, I found the mysterious island—a spot no larger than a pinprick, stuck in the immense blue wastes of the South Atlantic Ocean, 1,000 miles south of the Equator. It was underlined in pink to denote a British possession (map, page 271).

Consulting the reference sources, I discovered that the pinprick is 10 miles long by 6 wide, has an area of 47 square miles, and is fully 2,000 miles from the nearest point on the South American coast. Though the West African mainland seems, from the map, to be comparatively close, it is 1,200 miles to the eastward.

Cape Town, nearest cosmopolitan center, is just short of 2,000 miles southeast. As for Washington, D. C., it is at least 6,000 miles away! In effect, the only point of land under a thousand miles distant is the even smaller pinprick called Ascension, 550 miles northwest, a dependency of the larger island (279).

A Letter from St. Helena, South Atlantic

With the help of a stamp collectors' magazine I got into correspondence in 1937 with a retired Englishman who had retreated to St. Helena to escape the mounting crowd. He didn't appear to mind writing long, informative letters to a teen-age schoolboy full of Darwin's "curiosity."

On old fashioned lined note paper headed "Island of St. Helena, South Atlantic," he wrote: "There is no place in the world I like better than St. Helena; everything is quiet and beautiful, no noise and bustle; conditions are somewhat similar to those existing in any remote English village a hundred years ago. I have rather a passion for islands. . .

Last year I realized my fondest and most romantic dream. I went on a 30,000-mile trip with three friends from New York through Africa, Cairo-to-Cape Town, and back to New York—via St. Helena.

From the Sudan I wrote to Dr. Earl [illegible], author of the only book about St. Helena published in recent years, and asked him for a letter of introduction to one of the islanders just in case I ever succeeded in getting there.

A month later I found a reply awaiting me in Nairobi, capital of Kenya Colony. Dr. Gosse had written to Mr. Humphrey V. Solomon, senior member of the oldest English family on the island (whose great-grandfather, Saul, had sold macaroni to Napoleon), asking him to show me around when and if I arrived.

When I finally reached Cape Town, I hastened to the offices of the Union-Castle Mail Steamship Company, Ltd., the only line in the world maintaining regular service with St. Helena and Ascension. To my joy I learned that a ship would be leaving for these points within two weeks. I talked a companion into coming with me.

Ships Call Seldom; Airplanes Never

Luck was with us, as the company's ships call at the Islands only every five or six weeks, on their way to England, and no airplane has ever landed on St. Helena.

My excitement knew no bounds as we made our way, through the Cape rollers, to our destination. At dawn on the fifth day out I was awakened by a cabin mate to hear that the steep cliffs of St. Helena were about two miles away, enshrouded in mist.

With a leap I was dressed and up on deck. There in the distance was a sight I hope never to forget: the sheer massive crags of the forbidding island which I had come such a long way to see, rising, just as Charles Darwin had promised, "abruptly like a huge black castle from the ocean."

The sun was trying to peep through the clouds which hung low over Sugarloaf Hill, and I shivered, more from nervous exhilaration than from the dank cold. It was indeed an awe-inspiring sight, and I could well imagine Napoleon's feelings as he saw these towering cliffs for the first time, in 1815, from the decks of H.M.S. *Northumberland*. Although he had approached from the northwest, the prospect must have been equally overwhelming.

His recorded remark, however, which was made to an aide, Gen. Gaspard Gourgaud, seems rather to understate his inner emotions.

Napoleon Himself May Have Seen This Venerable Terrace

[illegible] The tame for [illegible] Plantation House, the Governor [illegible]

All he said was: "It is not an attractive pl[illegible] should have [illegible] better to remain in Egypt [illegible] by now. I should be Emperor [illegible] the [illegible]

[illegible] Jamestown, the capital and sole [illegible]

We could see [illegible] from the jetty [illegible] the [illegible] and weatherstrip.

Dozens of native [illegible]

[illegible] boats, when the [illegible] to the captain's cabin. There I [illegible] duced to the [illegible] camp to the Governor [illegible] The ADC said He Excellency wished my friend and [illegible] to have lunch with him at Plantation House, his official residence (pages 264, 265).

The Island's First Automobile

Mr. Salomon, who in 1929 had been the first St. Helenian resident to import an automobile, offered to conduct us after lunch [illegible] in his Austin sedan. Before [illegible] we were [illegible] driven to Napoleon's [illegible] the house the Emperor had lived in until his death (265).

gathered around our ship [illegible] passengers [illegible] wish to go ashore in [illegible] little boats.

The large [illegible] smaller craft [illegible] The latter [illegible] officials—the medical officer, [illegible] and Government secretary (page 270). In the barge was a large gang of [illegible] boxers ready to unload the tons of supplies we were bringing for the island's [illegible]

Unfortunately, the [illegible] not merely [illegible] for its own popu[illegible] at last under [illegible] people. Its main imports are, therefore, foodstuffs (flour, rice, sugar, butter, milk [illegible]) and [illegible] and machinery.

Though there are [illegible] boats to help eke out the islanders' meager existence, and in 1948, about 290 pigs, 1,000 cattle, 3,[illegible] sheep, and about 7,500 chickens to fall back on, the chief crop is the potato.

I was halfway down the gangway, [illegible]

On the 10-minute row to shore, for which we paid the princely official tariff of [illegible] cents, I was intrigued by the Old World lines and manners of the foreign native fishermen who handled the oars. They were of mixed origin, as are all but approximately 50 of the island's population.

Most are descendants of settlers brought from England by the British East India Company and of slaves transported from Africa and Madagascar.

Though their skins were dark, they had European features and spoke English, the only language of the island, with a fascinating [illegible]

As we stepped ashore a band of St. Helenans [illegible] we evidently constituted a great event [illegible] were the [illegible] of fresh air being blown in from the [illegible] known world beyond the shaggy cliffs of their circumscribed home. Mr. Solomon beckoned to a stalling driver, and we [illegible] [illegible] Legislature, since 1928.

Jamestown's Castle Yielded Only to White Ants

[illegible] Roberts in [illegible]. A gala ball was given [illegible] the visiting Duke of Edinburgh in [illegible]. Later the building [illegible] cockroaches [illegible]. The insects were imported unwittingly [illegible] from Brazil [illegible] The Castle [illegible]

Our St. Helenian driver was a friendly and intelligent man, and in his own way gave us some illuminating sidelights on the conditions of life of himself and his fellow islanders.

"Mister," he said, "we Island people don't have no fortune, you understand, and we don't have nothin' much to buy, neither, because there ain't but a couple of shops in the town. Most of what them shops has is expensive on account of the ships has got to bring them goods all the way in from England and Cape Town."

I asked him how much, for instance, he made as a motor driver and mechanic.

"Oh, I reckon about three bob (42 cents) a day. The [illegible] what work in them this mills makes more. I should say about three-and-six (49 cents), and they works 48 hours a week."

To my query about the women's wages he answered disdainfully that they, being of the weaker sex, make about 14 cents a day less than the men.

Ways the Islanders Earn a Living

We then went on to discuss the occupations of the islanders.

Apart from the 70 other men who follow his profession, he said the flax mill employed about 200 men and women [illegible] a

St. Helena's Only Town Huddles in a Rocky Ravine Below Ladder Hill (Left)

Located by St. Helena's steep cliffs, S.S. *Llangibby Castle* lies at anchor [illegible] port, an open roadstead. The road winding thru St. James [illegible] road. Motor travel was unknown here until 19[illegible] 1947, not long from their African trip

boatmen and fishermen; about 350 were skilled and general laborers; and 80 or so were building tradesmen and apprentices.

And there's been farm workers, about 165 of them. If they're employed by the Government, they gets a tanner (7 cents) a day more than the ones what work for the rich men."

This called for fuller explanation. "Who are the rich men?" I asked.

"Them's the men—and I think there's nine of them—who own bits of land over 100 acres [illegible]

[illegible] the island people who have holdings of under 100 acres.

[illegible] "We don't have nothin' to say about wages, we're paid, cause the Gov'nor decides [illegible] right, after his men have had a talk with our bosses. But we gets along as best we can [illegible] we leads a quiet life, though I [illegible] a quick beer at the Consulate on a Saturday night, you know, mister!"

As the car started with a roar not just [illegible] I had a weird sensation that both the car and I were 20th-century anachronisms. The whole atmosphere of the island was [illegible] century, and the houses on the main street of Jamestown seemed like a city [illegible] wood set constructed for a film about [illegible] of the Emperor Napoleon Bonaparte.

Since there was no electricity at the time of my visit (though there is now), a lamplighter still went on his evening rounds, but only if the moonlight was not strong enough to light up the streets with its own power. It was almost as at the death of Napoleon [illegible] island that even Time had stood still ever since.

This is not entirely true, however. The Consulate, the one hotel, has a brilliantly colored mechanical hanging on the dining-room wall, which celebrates the coronation of

Edward VII in 1902; and movies have at last reached St. Helena. Once a week a 20- to 30-year-old veteran of the silent screen is shown at the only theater.

We drove through the town, past the Briars, where Napoleon suffered the first two months of his imprisonment—it's now the cable station—and on up into the higher parts of the island. The metaled road was wide enough for only one car, and the gradients were alarmingly steep. Gradually the bare volcanic slopes of Jamestown gave way to occasional prickly pear bushes and then to gorse, small trees (kafir booms), and semitropical vegetation.

After about two miles we came to a sad yet lovely place called Geranium Valley. Here lies the blank, empty tomb of Napoleon, surrounded by cypress trees.

It is blank because the Emperor's aide, Count Montholon, disagreed with the Governor, Sir Hudson Lowe, over whether the stone slab should bear the name NAPOLEON which he favored, or NAPOLEON BONAPARTE, which the Governor preferred. As a result of the dispute, the French decided that no inscription at all should be carved on the face of the tomb.

It was emptied when the Prince de Joinville took Napoleon's remains back to Paris with him on *La Belle Poule* in 1840, for interment in the Invalides.

Near the tomb we drank some cool water from the spring from which the tragic prisoner used to get his drinking supply.

A Visit to Longwood House

A mile and a half farther on, I spotted Longwood House, familiar to me from old photographs (page 277). The buildings themselves, begun in 1753, were securely locked. They looked almost bare inside and seemed to be going to rack and ruin from the depredations of the voracious white ant, or termite.

The whole estate now belongs to the French Government, necessitating the presence of the only foreign official on St. Helena—M. Georges Fragnot, a vice consul for France and in charge of all Napoleonic relics.

This custodian not being accessible, I examined the little garden behind the main house which the captive had taken great pleasure in designing himself. I was delighted to discover that a sod wall had been constructed in a corner which, although somewhat like an air-raid shelter, had been carefully molded into the shape of the Emperor's famous three-cornered hat!

No one seems to have recorded the reason for this. It is known, however, that in the rectangular space which had been cut out of the center of the wall Napoleon sometimes used to take his afternoon tea.

In the foreground was a semicircular tank which Napoleon had intended for goldfish, and to the right a small gazebo from which he could get a good view of the surrounding countryside.

Secret Peepholes Used by Napoleon

I then turned my attention back to the house and noticed a very poignant thing: one of the green jalousies barring a window had had two peepholes cut in it from the inside (page 279).

After prolonged research I have found out the intriguing reason for them.

They had been cut at the express order of the prisoner so that he could rest his spyglass in them when the shutters were in place and quietly watch the troop movements and race meetings at Deadwood Camp, more than a mile away, without being observed by the sentries.

The top hole is five feet from the ground suitable for a man about 5 feet 6 inches in height when standing. The lower, 3 feet 10 inches, is intended for the same man sitting in a chair right up against the window.

I was so fascinated with these obscure discoveries that I almost forgot to ask our driver to take us over to Teutonic Hall, the house in which the kind old correspondent of my school days had lived.

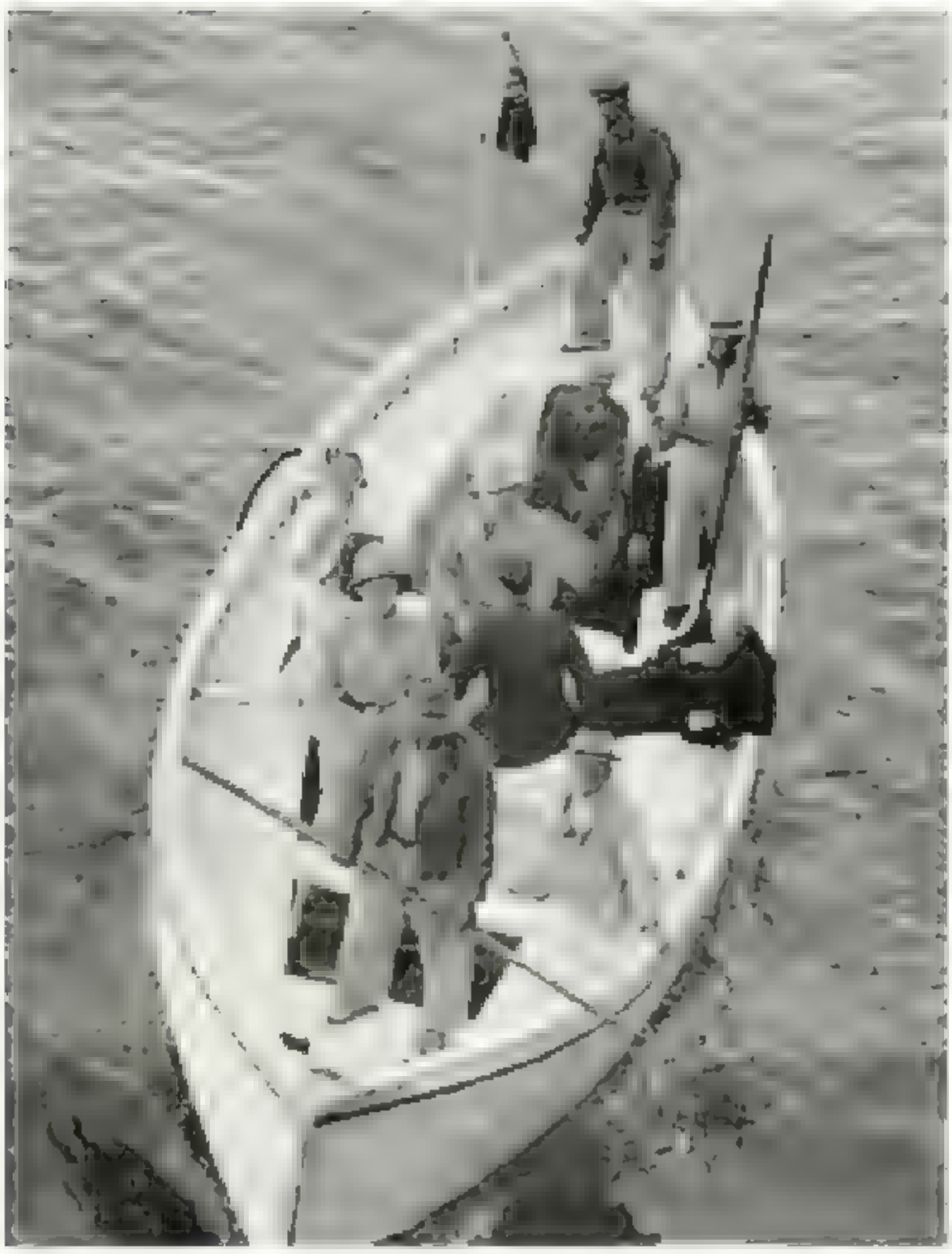
When we arrived, I found that it too had been forgotten. The unknown old man had left, or died, and the building had become a rather run-down farmhouse.

By now it was nearing luncheon, and we hastened over the winding lanes to keep our appointment in the one really grand old mansion on the Island: the Governor's residence, known as Plantation House, some three miles from Jamestown (page 273).

It is a fine country house of more than 40 rooms, begun in 1791 and beautifully kept up. The grounds cover 176 acres and include luxuriant vegetation and fine indigenous and imported trees. Over the front door is the quaint shield of St. Helena.

We were escorted into the living room by the young ADC and presented to Governor George Andrew Joy, C.M.G., and Mrs. Joy. (The governor has since been knighted.) Other luncheon guests included the Chief Justice of the Gold Coast (who had been our fellow passenger), the captain and chief engineer of our ship, and the chief treasurer of St. Helena.

The exotic setting for the meal was com-



In a Small Boat St. Helena Officials Board the Author's Ship

Passengers and cargo must be transferred between ship and island. When the Atlantic [illegible] making landing difficult. In the days of [illegible] one year. Now [illegible]

ete. While absorbing its atmosphere, I learned something of the history, administration, and economy of the island from its commander in chief. He said he had been at [illegible] since May 31, 1947.

St. Helena was discovered by the Portuguese navigator, João da Nova Castella, on May 21, 1502, the feast day of the mother of Constantine the Great, and named after her. The Portuguese kept this uninhabited island a secret, however, until Capt. Thomas Cavendish, third circumnavigator of the globe, touched there on his homeward voyage in 1588.

Thereafter, English and Dutch ships called at frequent intervals to water and refit until the year 1633, when the Dutch decided to annex it. They held it with only infrequent occupation until 1659, when Capt. John Dutton of the East India Company arrived, found it unoccupied, took possession of it, and became the first English governor of the island.

In 1673 the Dutch seized it again, but within six months the British had it back and it was successfully held by the Honorable East India Company under charter from Charles II until 1834. It then became a fully fledged colony directly under the Crown.

It is now administered by the Governor, who makes ordinances, aided by executive and advisory councils. The latter consists of six people not holding any office under the Crown but appointed by the Governor.

Ascension Island (pages 276, 279) was made a dependency in 1922 and Tristan da Cunha and Gough in 1938.* Because there is no local shipping between these scattered islands, the Governor confessed to me that he has never been able to visit any of his dependencies.

Economically speaking, the Island's fortunes have been on the decline since 1821. Real prosperity and the Emperor died together that year, and despite some noble efforts by the Colonial Office, I feel that St. Helena has been receding in the world's memory ever since.

In an attempt to bring revenue to a small community trying to live on an inadequate

* See [illegible] the National Geographic [illegible]

A Flyspeck on the South Atlantic Map: St. Helena Caps a Submerged Mountain

Discovered in 1502 by Portuguese navigator João da Nova Castella, the sheer cliffs peak rises sharply from the ocean depths; springs gushing from its mountainsides give unlimited fresh water, a boon to [illegible] that passed this way. Sailors' ships around the Cape of Good Hope. The island is 2000 miles from Cape Town, South Africa, [illegible] from the nearest land in South America. Ascension [illegible] dependencies, with [illegible] an important cable station, are 800 miles to the northwest (page [illegible]).

pension," the home government introduced the growing of New Zealand flax, or "hemp" (*Phormium tenax*) in 1874, and, although the plan was a complete failure at first, the export from this of manufactured hemp had become a money-making proposition by 1907. Some 60 percent of the total exports in 1948 consisted of hemp and its by-product, tow (*Z741*).

Mr. Solomon owns three of eight mills in operation and operates under lease the Government mill at Longwood. They produce also a limited amount of rope, twine, matting and sacks. The only other export is a small annual crop of lily bulbs (*Lilium candidum*).

It must be remembered that a large part of St. Helena's yearly revenue comes from the sale to collectors of its dignified postage stamps, although there is no internal mail system. Likewise, no newspaper, radio station, bank, or public transportation exists on the island. There are, however, 65 miles of roads and, by an amusing coincidence, a like number of telephones.

There is a prison, but very little crime; and the police force numbers one corporal and

Crumbling Longwood Housed the Emperor During His Exile

[illegible]

10 compatriots. Education, compulsory between the ages of [illegible] to 12 years, is 2 schedules and there are hospitals. The Governor added that unemployment was a perennial worry and that the few natives who [illegible] to England and South Africa each year as domestic workers are being encouraged to do so.

[illegible] the delicious lunch was served [illegible] Napoleon's furniture [illegible] each room in the house identifying the correct occupants: "The Governor's Room," "The Admiral's Room," "The Baron's Room"; the gentlemanly manners of the whole gathering; the sensitive anachronism of my being there at all—all these contributed [illegible]

A Living Link with Napoleon

But [illegible] until after lunch when the Governor [illegible] me to what is popularly believed to be a living symbol of this time-honored [illegible] I knew my wishes had not escaped [illegible]

There it was on the lawn in front of the house, where it had probably been [illegible] great-grandfather's visit, and where [illegible] have been grazing contentedly on October 17, 1815, when the most celebrated man of his time first set foot on the island: a giant land tortoise. It is said to be the only living link [illegible] world with Napoleon (page [illegible]).

I have in my possession a colored print published in 1851 showing Plantation House with this same veteran and another in the foreground. The text accompanying it says that no one at that time remembered when they were brought to the island.

It is known, however, that some such tortoises were originally imported, two probably in the 18th century, from the island of Mauritius in the Indian Ocean. One died in [illegible] the second fell over a cliff in 1918, breaking its

Home of St. Helena's Governor Suggests a Transplanted English Manor

Plantation House, built in 1791 [illegible] East India Company [illegible] St. Helena [illegible]

field and the surrounding [illegible] where I saw [illegible] the grounds of the Governor's residence.

After we had [illegible] that the [illegible] have been [illegible] Napoleon [illegible] Mr. [illegible] took us on a lovely drive into the highlands [illegible] with its farmhouses and [illegible] sometimes [illegible] of northern England and at other times of the milder parts of Scotland.

[illegible] pleasures [illegible] but only one [illegible] which is a [illegible]

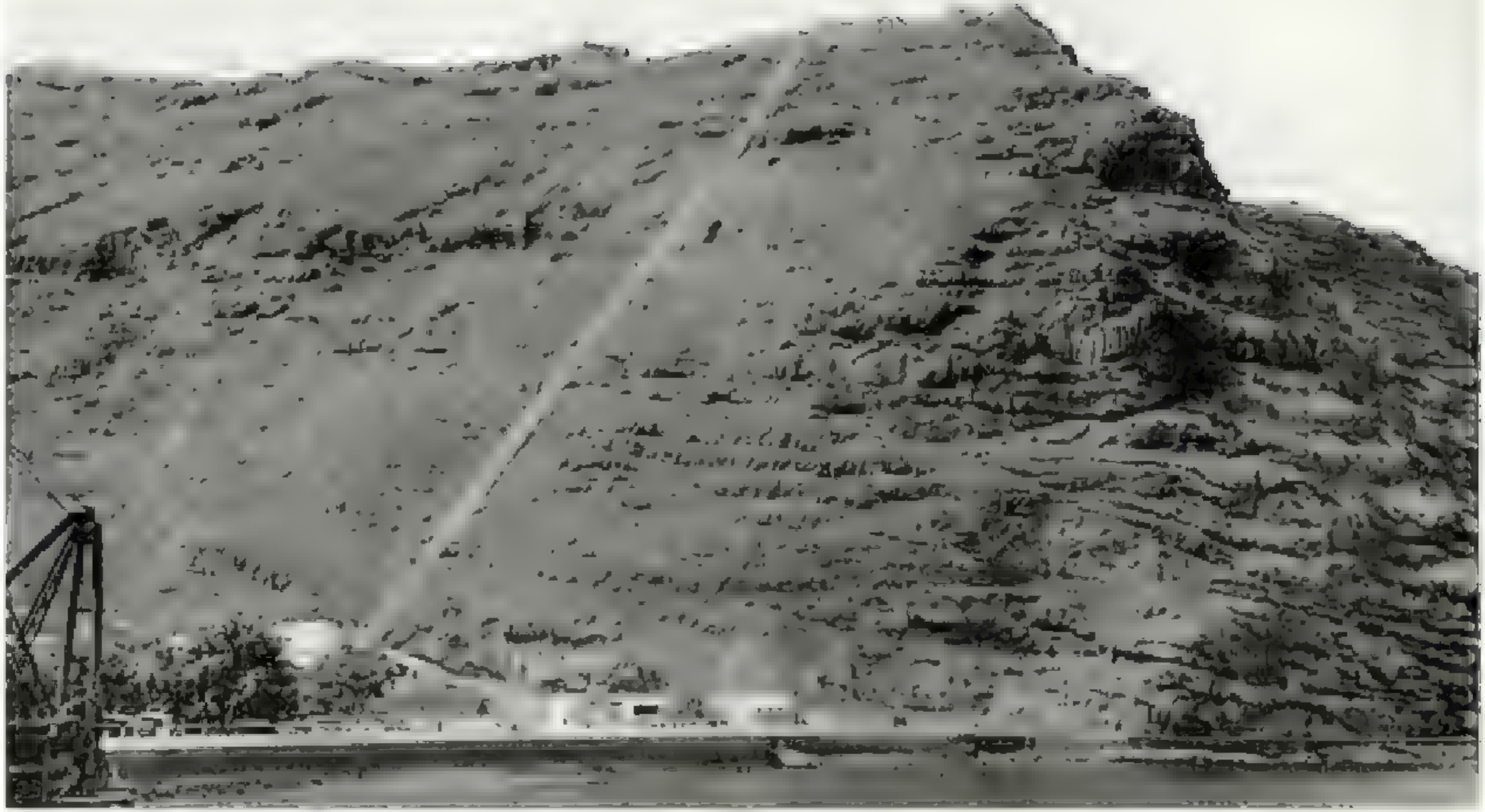
[illegible] to grow in these [illegible] St. Helena having an equable annual temperature [illegible] We passed [illegible] Mount Actaeon, which is [illegible] feet above sea level and the highest point on the island.

Returning a different way, we came upon what was the most romantic scene of all [illegible] Plantation House [illegible] and Lady [illegible] (page 574). [illegible] and the [illegible] right [illegible] The [illegible] sound of the [illegible]

After we had gazed at this [illegible] for half an hour, we saw some other [illegible] coming toward us [illegible] The [illegible] to St. Helena [illegible]

The Governor's small [illegible] High Knoll [illegible] Standing on the [illegible] walls

Mists Borne on Trade Winds Nourish Lush Patches of Fern on the Highlands Overlooking Sandy Bay



Islanders Must Climb 68 Steep Steps to Reach the Foot Crossing Ladder 11 B; Sturdy Lads Can Do It in 15 Minutes

St. Helena's Nearest Neighbor, Pleasant Ascension Island, Dots the Atlantic 800 Miles to the Northwest

Below the Dizzy Top of Jacob's Ladder Spreads Jamestown, Its Centuries-old Houses Wearing Pink, Blue, and Gray Tints

Beside a Muzzle-loader Stands the Last Boer War Prisoner

[illegible]

we had an uninterrupted view of the South Atlantic for many miles in every direction.

[illegible] had been kind enough [illegible] complete strangers, he [illegible] that we have to [illegible] his [illegible] and then with overwhelming generosity he presented me with a first edition of the classic book, *Napoleon in Exile; or, A Voice from St. Helena*, which Napoleon's physician, Barry Edward O'Meara, had published in 1822.

We [illegible] to him gratefully, devoted [illegible] the town to examine the old [illegible] built into the walls of the Castle [illegible] Helena's town had founded in 1[illegible] page 247 [illegible] and repaired to the Consulate Hotel for a frugal dinner by candlelight. The raucous songs of the sailors from our ship drifted in [illegible] access to Ladder Hill fort.

We soon found out that the climb took a panting 15 minutes, and no wonder, when we realized we had traveled at more than a 45° angle for 923 feet!

It was worth the exertion, however, because up on the fort stood a very interesting old man: Charles South, 75, St. Helena's last surviving Boer War prisoner. He was captured by the British in South Africa and had been shipped along with the Boer general Piet Arnoldus Cronje, and 512 other [illegible] to this island which had already [illegible] for another distinguished [illegible].

He told us that he had been liberated in 1903. [illegible] that, like his regular prison, he had elected to stay there forever. He had married a native and for many years had run

[illegible] us from [illegible] the [illegible] the [illegible] p[illegible] train and Mr. Solomon [illegible] business [illegible] and forthwith had a brilliant idea. Since we were due to sail that night and I passionately wanted more time on the island, why couldn't Mr. Solomon deliver more lemp from his mills for shipment to England so that it would take the captain longer to complete loading? Everyone would make more money, and we would have more precious moments on St. Helena.

Climbing Jacob's Ladder of 699 Steps

My plan worked. We stayed overnight and next morning rowed ashore with the [illegible] to climb the 699 steps of Jacob's Ladder [illegible] 273 and 277.

This is another unique feature of St. Helena. It is built straight up the face of the [illegible] from the [illegible] The Royal Engineers constructed it in 1857 [illegible]

[illegible] he traveled to Durban to see his aging mother. [illegible] took his photograph, and then [illegible] literally run down the "rungs" of Jacob's Ladder to have what turned out to be an unfortunate Helenian adventure. Mr. Solomon had told us about the safe spot for swimming off the island, and now that we were hot and tired we decided to [illegible] together with several other younger passengers, we tented a steep and bumped over the precipice to water's edge.

It was a rocky, [illegible] spot with dark water and purple volcanic sand—not in the least inviting. But how many people can claim they have been swimming off the coast of St. Helena?

We had [illegible] only a few minutes when to our [illegible] we heard a [illegible] on our ship and saw that he was getting ready to put to sea.

Standing or Sitting, "Honey" Could Peer Through His Spyglass

Though permitted [illegible] to wishes, Napoleon [illegible] sternly. To [illegible] than a mile away.

We shouted frantically to a fisherman [illegible] to come and get us, but because of the waves he couldn't do so. We were obliged to collect our clothes, watches and cameras from the beach and maneuver out to his boat as best we could, on our own.

We clambered in and were rowed out to the big ship towering over us. A rope ladder was lowered, and, much to the general hilarity of the other passengers, six soaked figures appeared on the deck.

Hard-won Permission to Land on Ascension

As the stark walls of Napoleon's prison vanished on the horizon, we turned our [illegible] Ascension Island, and within [illegible] the airfield and refueling [illegible] Air Transport Command by the U. S. Army Engineers, that I always think of it as the "refueling island."

However, Union-Castle ticket holders seldom go ashore there, since the line displays a stern edict in Cape Town about this port of call: "No passengers may land without permission from the Ship's Commander and the Resident Magistrate of the Island."

Accordingly, I had made strenuous efforts before leaving South Africa to be accorded this rare privilege, directing my requests to Cable and Wireless, Ltd., whose resident manager acts as magistrate and administers the island for St. Helena's Governor.

At first the authorities had been doubtful, even though I politely told them I wished to take photographs; but soon they had softened and wired the resident magistrate.

He replied: "Pleased to arrange but will depend on factors time ship calls/weather and duration stay he should arrange with captain for reasonable time ashore if conditions favorable."

Luckily our captain was a photographer also, and after I had made myself known to him he suggested that we might go ashore with him.

Apparently there are two valid reasons for this red tape. One is that the island amounts to what might be called a private office, and the other is a legitimate worry about the "rollers."

Mystery of the Giant Waves

These giant waves suddenly appear on an otherwise calm sea from the north against the prevailing southeast trades. They make all contact between a passenger ship and Ascension's little jetty impossible and sometimes last for several days. Most oceanographers believe they are caused by storms moving in the North Atlantic.

Practically the whole cable company staff of 28 men and their families met us in their motor launch, as we anchored off the jetty, because their wives like to use the customary two-hour stop to get in a quick coiffure in the ship's hairdressing parlor.

Mr. V. W. Oelrichs, the cable station manager and resident magistrate, invited the captain, my friend, and me to accompany him back to Georgetown, the island headquarters, telling us meanwhile how much most of the employees liked their two-year stretches of duty on the lonely outpost.

He laughingly suggested that perhaps this was due to the fact that no taxes or customs duties are paid by them, nor do their little cars need any license plates to run around the island.

Even more likely as a reason might be the local cost of whisky and gin, $1.35 and 70 cents a bottle!

While showing us the machinery in the actual cable office, Mr. Oelrichs proudly mentioned that the first news flashed around the world of the fall of Paris in 1940 had been transmitted to London from Ascension.

At my request, we piled into the magistrate's jeep and started the circuitous drive around 24 hairpin bends to the top of Green Mountain, the 2,800-foot peak of the island (page 276). Georgetown and all its surroundings, as far as eye can see, lack any vestige of greenery, but up on this summit is a tropical paradise of misty vegetation.

As we reversed the car to get around a particularly sharp corner, Mr. Oelrichs told us that all members of his staff are given six days' leave every six months so that they can spend a short holiday in the bungalows on this lush peak, pretending to themselves that they are on another planet. They then return to "town" in a refreshed mood to tackle their daily jobs in the bare clinker area again.

At the top, we saw some of the 17 St. Helenians who are employed to look after the company's farm there. All kinds of vegetables were growing in the rich soil, and there were signs of the 18 cattle, 704 sheep, and sundry pigs and poultry which supply the settlement here with fresh food and milk.

On the way down, I heard how the famous green turtles of Ascension were formerly caught for export. As the unfortunate creatures lay on the beaches, men would quietly attach empty kerosene cans to their flippers, turn them on their backs in a helpless position, and wait for the tide to come in and float them out to sea. Then a fishing boat equipped with a derrick would approach, hoist the 500 to 600 pounds of potential soup to its deck, and prepare the turtles for shipment alive to England.

At Last, the Talkies

The last piece of information I picked up in Ascension was a minor one, but it set me off on a train of thought which seemed to bear out my description of St. Helena as the "forgotten island." It was that talkies have now reached this bastion of solitude. I compared this sign of modernity with St. Helena's silent screen. I then thought of Ascension's airstrip and how simple and quick communications with its barren contours could always be.

This reminded me of something the Governor had told me. No spot could be found on St. Helena, after a thorough survey of its terrain in 1943, on which an airport could be built. Thus it was assured of a permanent remoteness from the bustle of modern life.

And finally I remembered some astonishing statistics I had seen. In 1845, 1,458 ships had called at Jamestown, and in 1948 only 31. Surely even the giant tortoise might be permitted the observation that his historic island had been forgotten?

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ORGANIZED FOR THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE

[illegible] and the purposes for which it was organized [illegible] Society. All receipts are devoted to The Magazine and expended directly to promote [illegible].

Articles and photographs are desired. For material The Magazine uses, generous remuneration is made.

In addition to the editorial and photographic surveys conducted by the staff, The Society has [illegible] more than 100 scientific expeditions, some of which required years of field work to achieve their objectives.

The Society's outside experts have pushed back the frontiers of [illegible] the vast communal dwellings in that region. The Society's [illegible] has puzzled historians for three hundred years.

In Mexico, The Society and the Smithsonian Institution, January [illegible], discovered [illegible] a date. [illegible] stone is engraved in Mayan characters with a date which [illegible] Spaniards [illegible] Cortez [illegible] attributes by 300 years anything heretofore dated in America, and reveals a great center of early American culture previously unknown.

On November 11, 1935, an [illegible] sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's [illegible] record, Explorer II, ascended to the world altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took flight in the gondola, nearly a ton of scientific instruments [illegible].

The National Geographic Society-U. S. Army Air Forces Expedition, from a camp in southern Brazil, photographed and observed the solar eclipse of 1947. This was the seventh expedition of The Society to observe a total eclipse of the sun.

The Society cooperated with Dr. William Beebe in deep sea expeditions off Bermuda during which a world record depth of [illegible] feet was attained.

The Society granted $25,000 and an additional $75,000 [illegible] the congressional appropriation for the purchase [illegible] of the grant sequoia trees in the Giant Forest [illegible] National Park of California were thereby saved [illegible] the American people.

One of the world's largest [illegible] was discovered in Arizona and Yukon by Hundred Miracles while exploring for The Society and the Harvard Botanical Expedition, 1935.

[illegible]


HAMILTON

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"All up and down the whole creation . . ."

. . . Wherever Americans [illegible] their tones were [illegible] the [illegible] melodies of Stephen Foster [illegible]

Stephen [illegible] 1850 [illegible] from the [illegible]

[illegible] wrote [illegible]

The idea was a simple one [illegible] banded together, on a [illegible] plan [illegible] hope to achieve security for their [illegible] and families against [illegible]

For a full century [illegible] Americans [illegible] have found security — protection designed [illegible] each member's requirements [illegible] the character [illegible] of National Life's management and the [illegible] National [illegible]

[illegible] this Free Picture Book and Our Compliments — [illegible]

NATIONAL LIFE
Insurance Company
[illegible] VERMONT

[illegible]

[illegible]

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There is great happiness on television . . . [illegible] of happiness
in the home where hearts are lifted by sharing family pleasures.
At [illegible] of television enjoyment,
[illegible] its stations [illegible] with dazzling clarity,
[illegible] finest instruments
[illegible] a television set can be.
[illegible]

Consoles, combinations, table models,
DuMont built the first commercial home television receiver—
DuMont [illegible]

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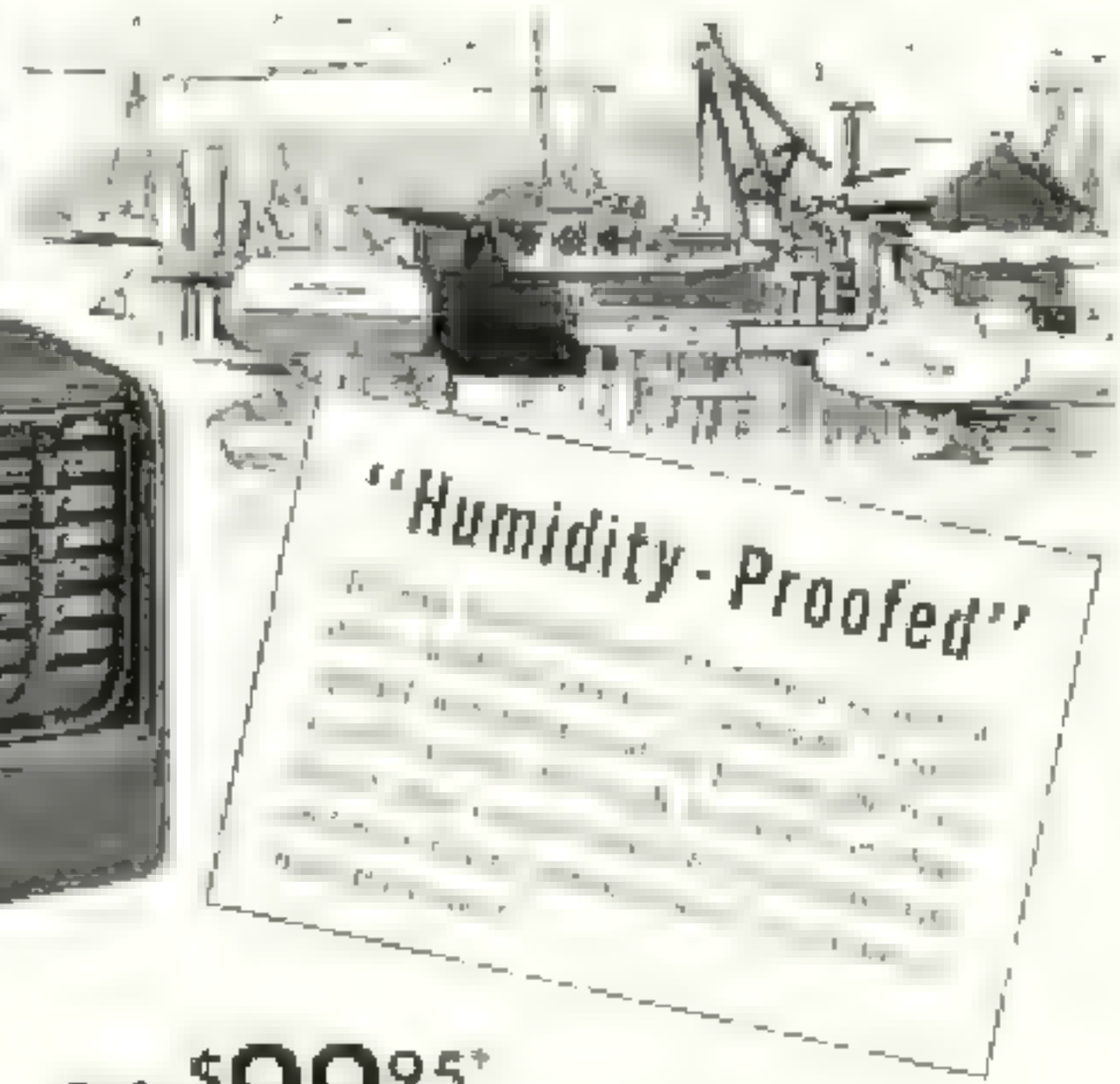
Finest for Television

Outpulls - Outplays - Outperforms them all!

NEW ZENITH "**Trans-Oceanic**"

Standard and Short wave

PORTABLE RADIO



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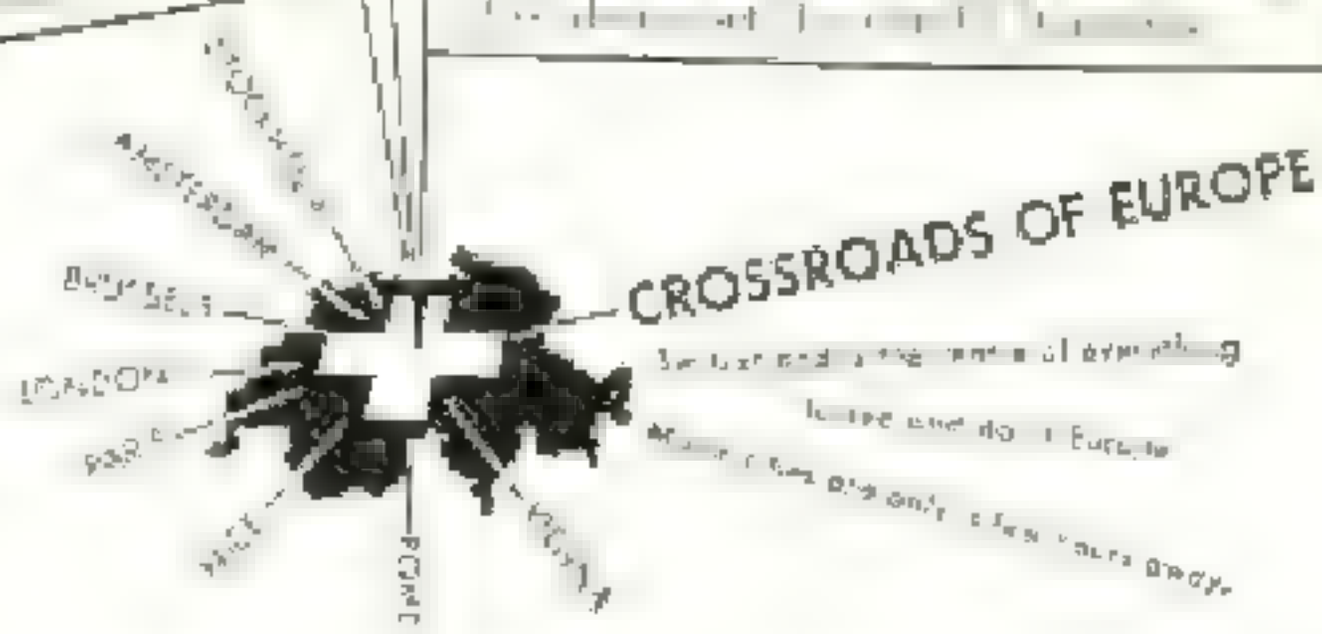
New! Save more than ever!

In Switzerland, land of [illegible] luxury and modern [illegible] travel fares are [illegible] [illegible] up to [illegible] [illegible] [illegible] [illegible] [illegible]!



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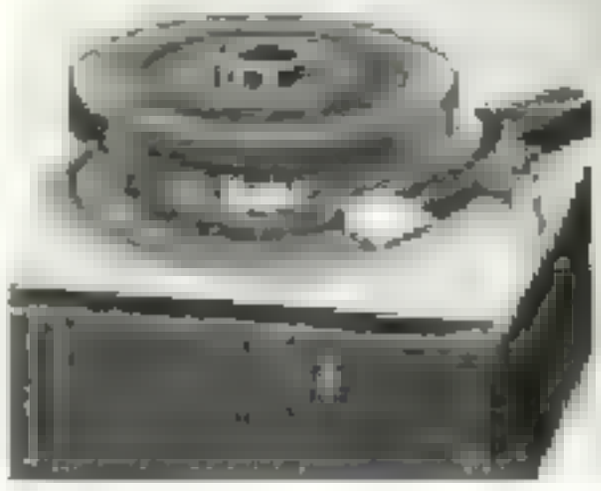
What ***magic number*** *makes music mirror-clear?*

Now, for more than a year music lovers have been enthralled by RCA Victor's remarkable 45-rpm record playing system. Already, millions have [illegible] the magic number that makes music mirror-clear.

As was said when the American Society of Industrial Engineers presented RCA Victor with its 1950 Merit Award, "We are moved to admiration by your bold departure from past practices in developing a completely integrated record and record-player system."

[illegible]



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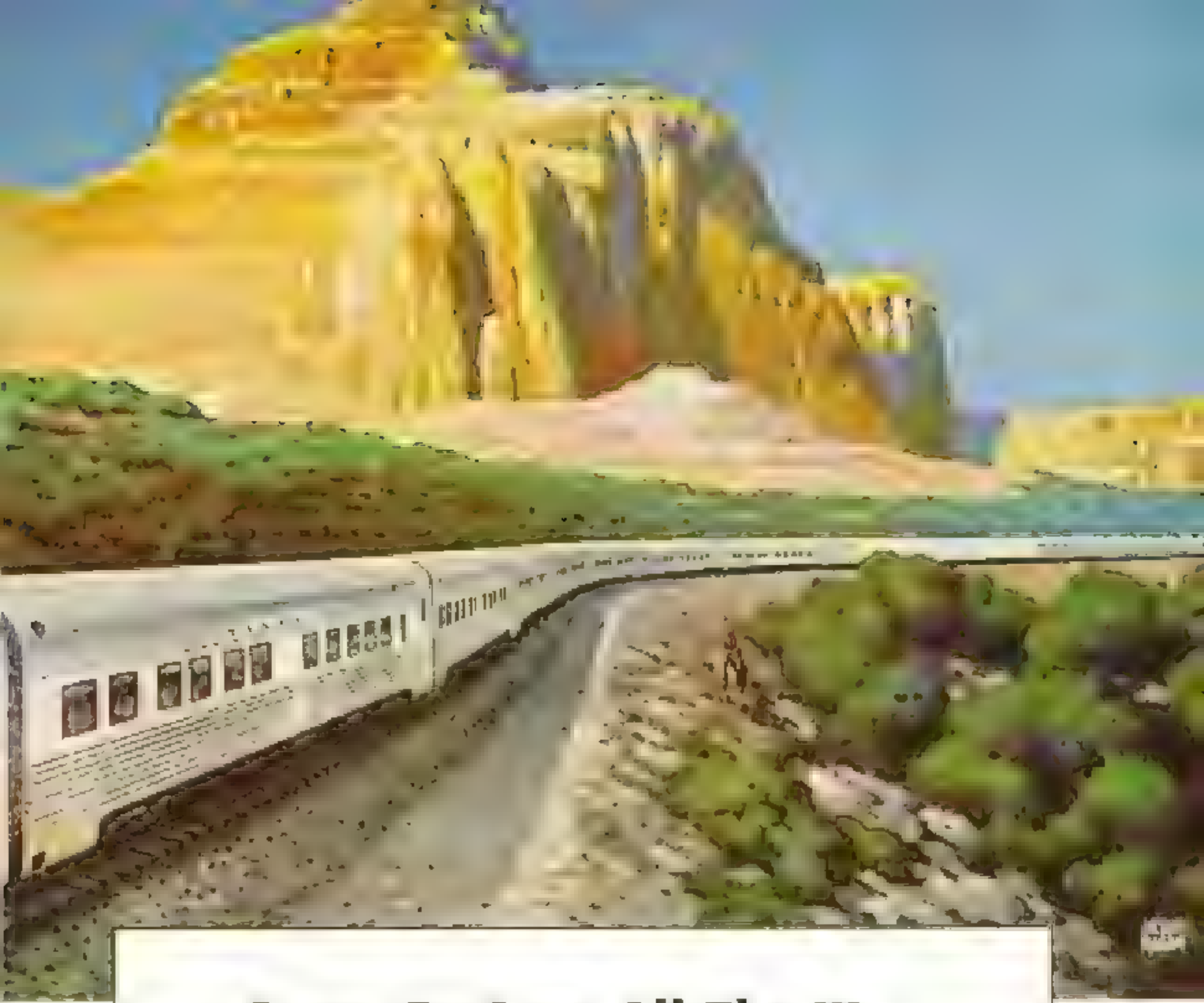


Santa Fe Goes All The Way

Two hundred and six stainless steel railway cars, built by The Budd Company, equip the Santa Fe's famous streamliners—trains near as such names as the Super Chief, The Chief, El Capitan.

In providing this premium equipment, Santa Fe has gone all the way to give you not only comfort and luxury, but also the unequaled security and safety of cars constructed of stainless steel.

Stainless steel is three times as strong as ordinary steel and retains its strength throughout the years because of its resistance to rust and corrosion. It is the best material ever used for railway car structures, both from the standpoint of the passengers who ride in the cars and the railroads which operate and maintain them.

This unique employment of a material is combined with the development of designs to use it to the most advantage. It is typical of all Budd practice, starting with the invention of the all-steel automobile body and the development of the steel wheel for all types of highway vehicles. The Budd Company, Philadelphia, Detroit.

Budd

How many cars on this page?

[illegible]

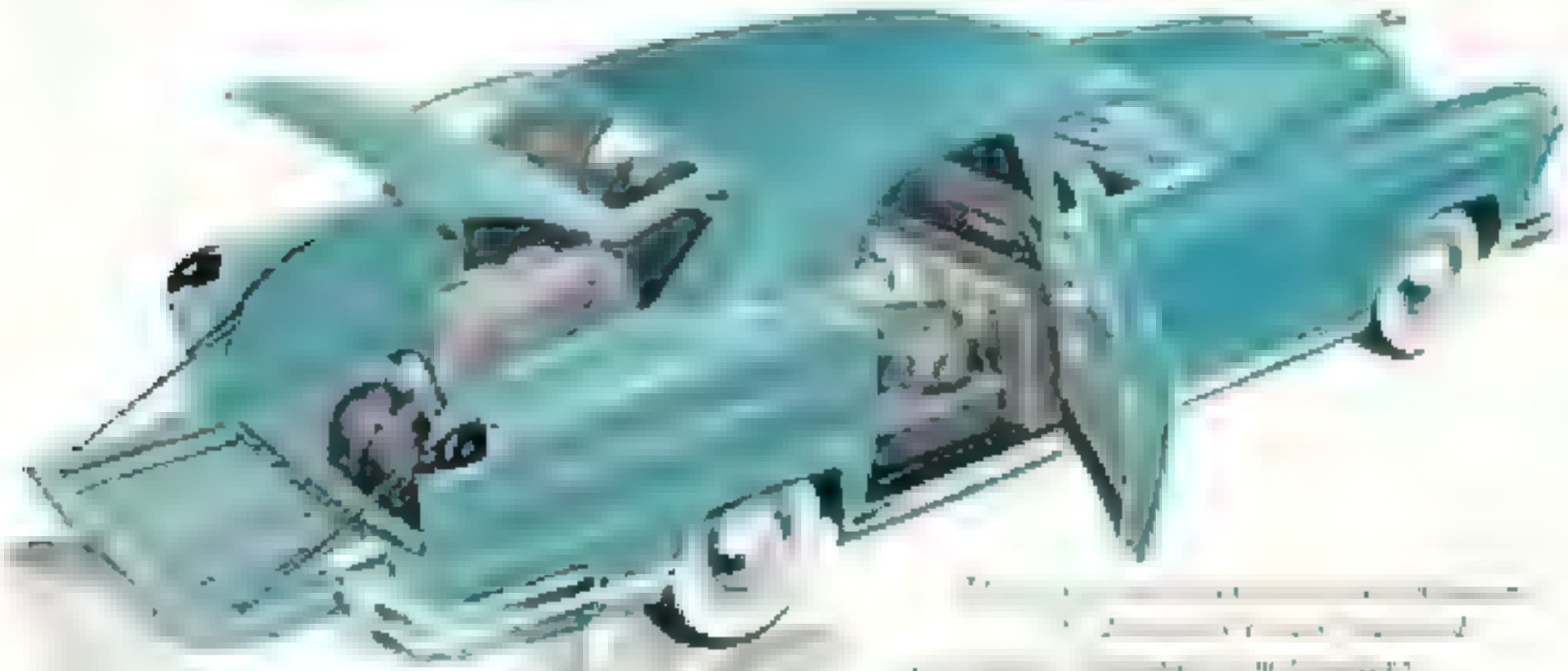
[illegible]

[illegible]

The beautiful

1951 FRAZER

The Pride of Willow Run

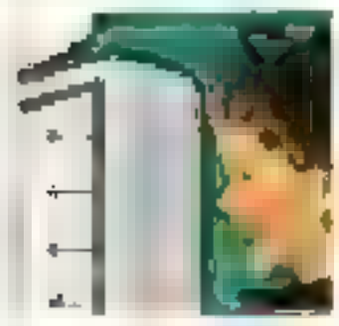


Have you seen General Electric's exciting new

ALNICO MAGNETIC DOOR?

Now you can open and close the refrigerator door without using your hands! No latch! No slam!

[illegible] magnets, placed [illegible] the door seal [illegible] grip the door and seal it completely [illegible] the way around.



Alnico magnets are permanent. They will last the lifetime of your refrigerator.

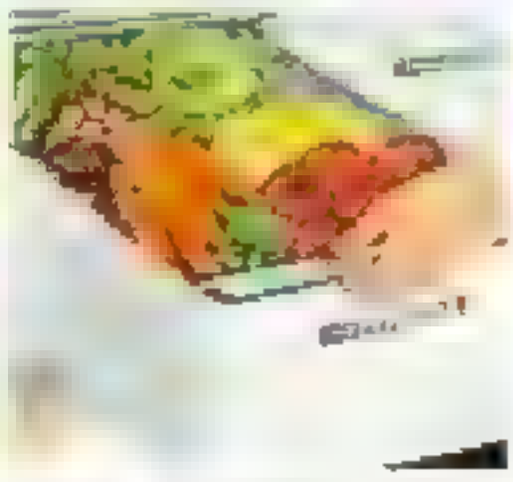
Furthermore, you don't have to hold open the Alnico Magnetic Door to the fresh-food compartment. A gentle pressure foot pedal swings it open [illegible]

Think of dependability, too!

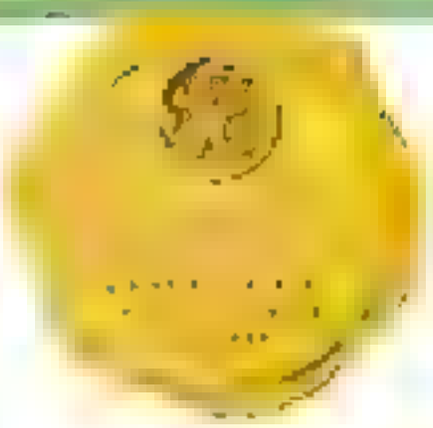
G-E Refrigerators are dependable. More than [illegible] are still performing [illegible] years of service. More [illegible] years, or longer.

Your General Electric [illegible] will be [illegible] to enjoy [illegible] Refrigerator-Home Freezer combinations. You'll find [illegible] the [illegible] Refrigerators, General Electric, Bridgeport 2, Connecticut.

New Redi-Cube Tray! [illegible]



New! Vegetable Roll-Drawer! [illegible]



Not one, but two Alnico Magnetic Doors — [illegible]

NEW GENERAL ELECTRIC

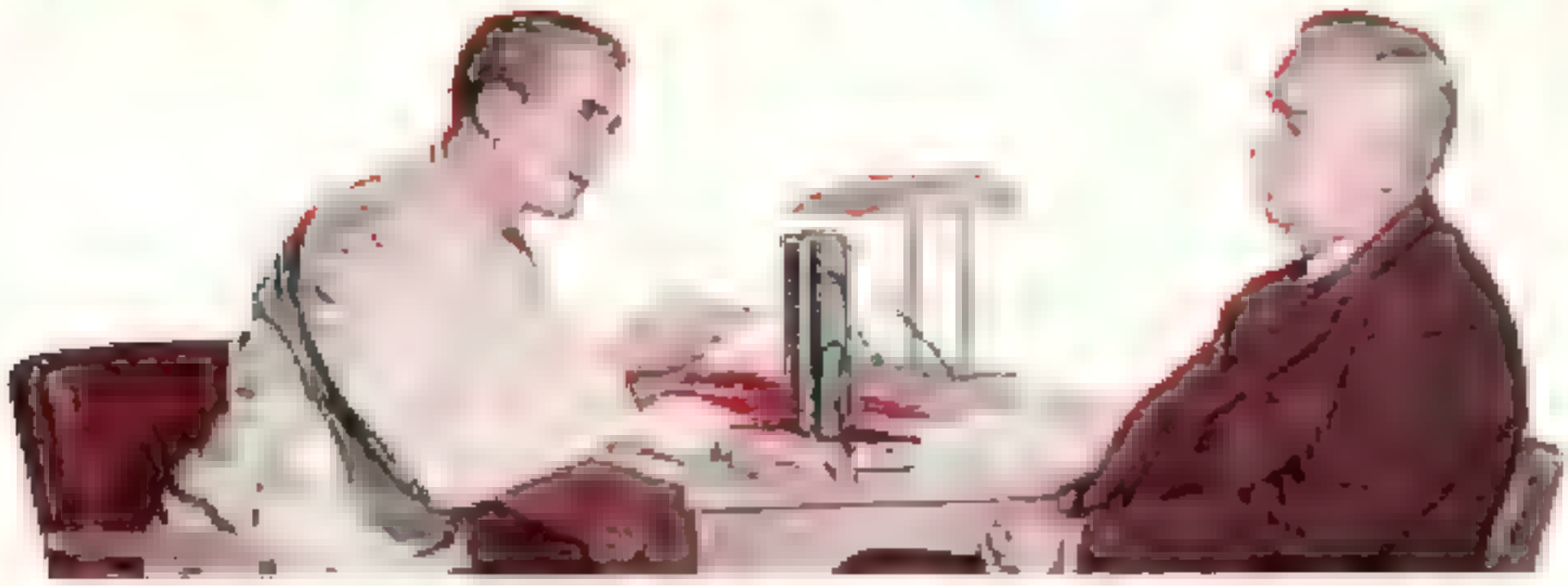
Refrigerator-Home Freezer Combination

A separate Refrigerator PLUS a separate Home Freezer

GENERAL ELECTRIC

The doctor advises a patient about

HIGH BLOOD PRESSURE



DOCTOR: "Your recent physical examination showed that you are in good condition, although your blood pressure is up. Additional tests and examinations I have made indicate that you have *uncomplicated* high blood pressure. This means that no underlying diseases or infections are causing your condition.

"Actually, high blood pressure, or hypertension, may be slight, moderate, or severe. Even when it is severe, many people continue to lead active, normal lives for many years simply by following the doctor's advice and by adopting healthful living habits."

PATIENT: "Just what is high blood pressure?"

DOCTOR: "It is a condition that results when the blood flowing through the body's small vessels meets increased resistance. This is usually brought about by the narrowing of these small vessels. This narrowing may occur in response to environment or other factors.

"Everybody's blood pressure varies from time to time. However, when these blood vessels remain unusually tightened up, persistent high blood pressure results."

PATIENT: "How does high blood pressure cause harm?"

DOCTOR: "Mainly by placing an additional strain on the heart and blood vessels. This, in turn, causes enlargement of the left ventricle of the heart. As a result, the efficiency of the heart's chief pump chamber is lessened. Then, too, the arteries wear out sooner than they would if the blood pressure were normal."

PATIENT: "I understand. Now, Doctor, what can I do to help myself?"

DOCTOR: "First, *learn to avoid worry and mental strain.* For example, if there are situations which always upset you, make a special effort to avoid them. Slow down—go through your daily routine without undue fuss or hurry. The calmer you become, the more your blood vessels tend to relax—and thus help to lower your blood pressure. You must also *get your weight down to what is normal for you and keep it there, you must get plenty of sleep and rest, and you must not neglect having periodic health examinations.*"

PATIENT: "What about the new treatments, special diets and drugs?"

DOCTOR: "In *selected* cases, the newer forms of treatment are often helpful. Some of the newer drugs may be helpful in many cases but owing to the wide variation in the causes of high blood pressure, these should only be taken with the advice of your physician. Various diets in which salt, protein, and fats are restricted have often benefited some patients. But in your case, like many others, simple common sense treatment usually produces good results."

Knowledge of what causes high blood pressure is increasing, thanks to research supported by the Life Insurance Medical Research Fund and others. In fact, there is hope that both preventive and curative measures may be found as research continues. For more information about high blood pressure, write for Metropolitan's free booklet, 404N, entitled "Your Heart."

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. . . but he's not bothered!

WHEN MOTHER [illegible] West, starts to [illegible] in a nest and [illegible] eggs.

The [illegible] as an [illegible], and with [illegible] nesting choices this [illegible] is free to go when [illegible] well.

Soon as the chicks are hatched by the heat of the morning [illegible] and [illegible], they dig themselves out and start foraging in the South Pacific jungle. They need no parental care.

Although the [illegible] the young [illegible] work for the [illegible] trying out their wings. And since they need plenty of care, isn't this the wrong time to [illegible]

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And growing up costs plenty these [illegible]

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[illegible]

[illegible] 12,000 times a day [illegible] that makes the big

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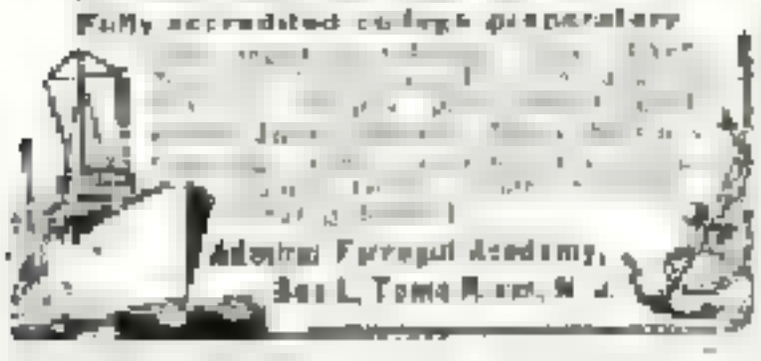

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